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INDEX TO VOLUME IX.

- Acanthis linaria*, 65,, 86, 131.
Accipiter cooperi, 83, 130, 138.
 velox, 62, 83, 130.
Actitis macularia, 61, 82.
Ægialitis semipalmata, 93.
 vocifera, 12, 61, 82, 130.
Aix sponsa, 12, 80.
Agelaius phonicus, 14, 64, 86.
Ammodramus lecontei, 140.
 sandwichensis savanna, 87.
 savannarum passerinus, 87,
 139.
Amphispiza belli nevadensis, 65.
Ampelis cedrorum, 66, 89, 130.
Anas boschas, 11, 61, 79, 130.
 obscura, 79, 131, 134.
 rubripes, 134.
Ani, 142.
Anser albifrons gambeli, 93.
Anthus pensilvanicus, 67, 91.
Antrostomus vociferus, 84.
Aquila chrysaetos, 83, 131.
Archibuteo ferrugineus 62.
 lagopus sancti-johannis, 62,
 83, 131.
Ardea carulea, 81.
 egretta, 109.
 herodias, 61, 80, 131.
 virescens, 81.
Ardetta exilis, 80, 116.
Asio accipitrinus, 14, 63, 83,
 131, 139.
 wilsonianus, 14, 63, 83, 130,
Astragalinus tristis, 65, 86, 130,
 132.
Aythya affinis, 80.
 americana, 93.
 collaris, 80.
 marila, 80.
 vallisneria, 80.
 Baird, Robert L., Spring Migra-
 tion for 1901, with an aver-
 age table for Lorain county,
 94; Notes from Iowa, 140.
 Baldpate, 12, 79, 99.
Bartramia longicauda, 82.
Bittern, American, 80, 100.
 Least, 80, 116, 128.
 Blackbird, Brewer, 14, 65.
 Red-winged, 14, 64, 86, 99,
 103, 128.
 Rusty, 14, 49, 86, 97, 99, 128,
 131.
 Bluebird, 15, 20, 44, 51, 54, 55,
 57, 74, 92, 98, 99, 101, 103, 121,
 122, 123, 129, 131, 140.
 Mountain, 67, 74.
 Western, 67.
 Bob-white, 12, 41, 47, 53, 56, 58,
 82, 128, 130, 132.
 Bobolink, 86, 100, 128.
Bonasa umbellus, 82, 130, 132.
 togata, 61.
 Booby, 141.
Botaurus lentiginosus, 80.
 Brant, Black, 31.
Branta canadensis, 12, 80, 131.
 hutchinsii, 12.
 occidentalis, 61.
 Bruen, Frank. Some Bluebird
 Boxes and Troubles, 121.
Bubo virginianus, 84, 130.
 arcticus, 63.
 Bufflehead, 67, 80, 99.
 Bunting, Indigo, 88, 96, 100, 103,
 124, 129.
 Lazuli, 60, 66.
Buteo borealis, 13, 83, 130, 138.
 calurus, 63.
 harlani, 13.
 lineatus, 14, 83, 130, 138.
 platypterus, 93.
 swainsoni, 62.
 Burns, Frank L., Capture of an
 American Egret (*Ardea egret-*
 ta) in Chester county, Pa., 109.
Canachites franklinii, 61.
 Canvas-back, 80.
 Cardinal, 15, 17, 19, 20, 21, 35, 50,
 53, 88, 103, 124, 129, 130, 139.
Cardinalis cardinalis, 15, 17, 19,
 20, 21, 50, 53, 88, 103, 130, 139.
Carpodacus mexicanus frontalis, 74.
 purpureus, 86, 131.
 Catbird, 91, 100, 102, 124, 129.
Catharistes atrata, 142.
Cathartes aura, 13, 62, 82, 130,
 138, 139.
Centrocercus urophasianus, 62.
Ceophlœus pileatus, 14.
 abieticola, 84,
 130.
Certhia familiaris americana,
 92, 131, 132.
 fusca, 21.
Ceryle, alcyon, 14, 63, 84, 130,
 141.
Chætura pelagica, 85.
 vauxii, 63.
Charitonetta albeola, 80.
 Chat, Long-tailed, 66.

- Yellow-breasted, 91, 100, 129.
 Chen hyperborea nivalis, 93.
 Chewink, 23.
 Chickadee, 18, 20, 29, 51, 53, 55, 92, 129, 131, 132.
 Carolina, 92, 104, 131.
 Mountain, 67.
 Oregon, 67.
 Chondestes grammacus, 87.
 strigatus, 65.
 Chordeiles virginianus, 85.
 henryi, 63.
 Cinclus mexicanus, 67.
 Circus hudsonius, 13, 62, 82, 131, 138.
 Cistothorus palustris, 92.
 paludicola, 67.
 stellaris, 92.
 Clangula clangula americana, 80, 131.
 Clivicola riparia, 66.
 Coccyzus americanus, 84.
 erythrophthalmus, 84.
 Colaptes auratus luteus, 14, 84, 130, 132, 138.
 cafer, 63.
 Colinus virginianus, 12, 82, 130, 132.
 Colymbus auritus, 78.
 holboëllii, 93.
 Compsothlypis americana usneæ, 89.
 Contopus richardsonii, 64.
 virens, 85.
 Coot, American, 67, 81, 93, 99.
 Conurus carolinensis, 84.
 Corvus americanus, 14, 64, 86, 130, 132.
 Cowbird, 15, 16, 60, 64, 86, 99, 103, 128.
 Crane, Sandhill, 61.
 Whooping, 81.
 Creeper, Brown, 20, 21, 51, 53, 56, 58, 92, 99, 129, 131, 132.
 California, 67.
 Crossbill, American, 49, 53, 65, 99.
 White-winged, 22, 45, 49, 65.
 Crotophaga ani., 142.
 Crow, American, 14, 20, 41, 49, 53, 54, 56, 58, 64, 86, 103, 128, 130, 132.
 Carrion, 142.
 Fish, 103.
 Cuckoo, Black-billed, 84, 100.
 Yellow-billed, 84, 100, 128.
 Curlew, Hudsonian, 139.
 Long-billed, 61.
 Cyanocitta cristata, 14, 85, 130, 132, 138.
 stelleri annectens, 64.
 Cyanospiza amœna, 66.
 cyanea, 88.
 Dabchick, 8.
 Dafila acuta, 12, 80, 131.
 Daniel, John W., Jr., Pelicans of Tampa Bay, 5; Incubation period of the Mockingbird, 68; The Cuban Tody (Todus multicolor), 113.
 Dawson, W. L., A Columbus mid-winter horizon, 16; A preliminary list of the birds of Yakima county, Washington, 59.
 Dendroica æstiva, 66, 89, 143.
 auduboni, 66.
 blackburniæ, 90.
 cærulescens, 90.
 castanea, 90.
 coronata, 15, 66, 90.
 discolor, 90.
 dominica albilora, 90.
 kirtlandi, 104.
 maculosa, 90.
 palmarum, 90.
 pensylvanica, 90.
 rara, 90.
 striata, 90.
 tigrina, 89.
 townsendi, 66.
 vigorsii, 90.
 virens, 90.
 Dickcissel, 88.
 Dipper, American, 67.
 Dolichonyx oryzivorus, 86.
 Dove, Mourning, 13, 43, 44, 48, 53, 54, 55, 62, 82, 97, 98, 99, 106, 128, 130, 137, 139.
 Dryobates pubescens medianus, 14, 84, 130, 132.
 gairdnerii, 63.
 villosus, 84, 130, 132.
 Duck, Black, 99, 131.
 Lesser Scaup, 80, 99.
 Red-legged Black, 134.
 Ring-necked, 80, 99.
 Ruddy, 61, 80, 99.
 Scaup, 80, 99.
 Wood, 12, 80, 99, 128.
 Eagle, Bald, 14, 48, 52, 62, 83, 128, 131.
 Golden, 48, 67, 83, 131.
 Harpie, 119.
 Ectopistes migratorius, 82.
 Egret, American, 109.
 Elanoides forficatus, 82.

- Embury, George C., Review of his "Birds of Madison county, New York", 31.
 Empidonax flaviventris, 85.
 hammondi, 64.
 minimus, 85.
 traillii, 85.
 virescens, 85.
 ereunetes pusillus, 143.
 Erismatura jamaicensis, 61, 80.
 Falco columbarius, 63, 132, 139.
 mexicanus, 62.
 peregrinus anatum, 62.
 sparverius, 14, 83, 130, 132, deserticolus, 63.
 Falcon, Prairie, 62.
 Finch, Cassin Purple, 67.
 House, 74.
 Purple, 49, 53, 86, 131.
 Flicker, Northern, 14, 18, 20, 49, 53, 55, 84, 97, 98, 99, 128, 130, 132, 138.
 Red-shafted, 63.
 Flycatcher, Crested, 85, 100, 104, 128.
 Green-crested, 85, 100, 128.
 Hammond, 64.
 Least, 85, 100, 128.
 Traill, 85, 100, 128.
 Yellow-bellied, 85.
 Fulica americana, 81.
 Galeoscoptes carolinensis, 91.
 Gallinago delicata, 7, 12, 61, 81, 131.
 Gallinula galeata, 81.
 Gallinule, Florida, 81.
 Purple, 81.
 Gault, Benj. T., Food habits of the Wilson Snipe, 7; A Song Sparrow's Nest, 15; A Letter from French Guiana, 140.
 Gavia imber, 79, 131.
 lumme, 79.
 Geothlypis agilis, 91.
 formosa, 90.
 philadelphia, 91.
 tolmiei, 66.
 trichas, 91.
 occidentalis, 66.
 Glaucidium gnoma californicum, 63.
 Gnatcatcher, Blue-gray, 92, 100, 125, 129.
 Godwit, Hudsonian, 31.
 Golden-eye, American, 67, 80, 131.
 Goldfinch, American, 22, 42, 49, 50, 53, 55, 65, 74, 86, 103, 128, 130, 132.
 Goose, American White-fronted, 93.
 Canada, 12, 80, 97, 99, 131.
 Greater Snow, 93.
 Hutchins, 12, 67.
 White-cheeked, 61.
 Grackle, Bronzed, 19, 20, 49, 52, 55, 86, 99, 128.
 Purple, 103.
 Grebe, Holboell, 67, 93.
 Horned, 51, 55, 78, 99.
 Pied-billed, 8, 78, 99, 128, 130.
 Western, 67.
 Grinnell, Joseph, Review of his "Pacific coast avifauna No. 3," 110.
 Grosbeak, Black-headed, 66.
 Blue, 103.
 Rose-breasted, 88, 100, 103, 129.
 Canadian Pine, 22, 45, 49.
 Grouse, Canadian Ruffed, 61.
 Columbian Sharp-tailed, 62.
 Franklin, 61.
 Ruffed, 47, 58, 75, 82, 130, 132.
 Sage, 62.
 Sooty, 67.
 Grus americana, 81.
 mexicana, 61.
 Guara rubra, 143.
 Gull, Bonaparte, 133.
 Herring, 47, 51, 79, 128, 131, 132.
 Great Black-backed, 79.
 Gypætus barbatus, 117.
 Gyps fulvus, 116.
 Haliaetus leucocephalus, 14, 62, 83, 131.
 Harelda hyemalis, 21, 80, 131.
 Hawk, American Rough-legged, 48, 62, 83, 131.
 American Sparrow, 14, 48, 55, 83, 99, 128, 130, 132.
 Broad-winged, 48, 93, 128.
 Cooper, 48, 83, 99, 130, 138.
 Desert Sparrow, 63.
 Duck, 62.
 Ferrugineus Rough-leg, 62.
 Harlan, 13.
 Marsh, 13, 48, 62, 82, 131, 138.
 Pigeon, 48, 63, 132, 139.
 Red-shouldered, 14, 48, 55, 83, 96, 128, 130, 138.
 Red-tailed, 13, 19, 48, 55, 83, 130, 138.

- Sharp-shinned, 48, 62, 75, 83, 130.
 Swainson, 62.
 Western Red-tailed, 62.
Helminthorus vermivorus, 89.
chrysoptera, 93.
Helminthopila celata lutescens, 66.
 peregrina, 89.
 pinus, 89, 139.
 rubricapilla, 89.
Helodromas solitarius, 82.
 Hen, Prairie, 13, 57.
 Henderson, Junius, Boulder, Colorado, birds increasing, 74.
 Henninger, Rev. W. F., A preliminary list of the birds of middle southern Ohio, 77; A new bird for Ohio, 134; An addition to the birds of middle southern Ohio, 133; Notes from Southern Ohio, 137.
 Heron, Black-crowned Night, 81.
 Great Blue, 8, 61, 80, 99, 128, 131.
 Green, 8, 81, 100, 128.
 Little Blue, 81.
Hirundo erythrogaster, 66, 88.
 Hollister, N., Notes on the winter birds of Arkansas, 10.
 Hummingbird, Calliope, 63.
 Ruby-throated, 31, 85, 100, 128.
 Hunt, Nellie H., Lakewood, New Jersey, notes, 74.
Hylocichla aliciae, 92.
 aonolaschkæ pallasii, 15.
 fuscescens, 92.
 guttata pallasii, 92.
 mustelina, 92.
 ustulatus, 67.
 Ibis, scarlet, 143.
Icteria virens, 91.
 longicauda, 66.
Icterus bullocki, 65.
 galbula, 86.
 spurius, 86.
Jacana, 142.
Jacana spinosa, 142.
 Jay, Blue, 14, 17, 18, 20, 49, 53, 55, 85, 103, 128, 130, 132, 138.
 Black-headed, 64.
 Oregon, 67.
 Jones, Lynds, Bird studies in Lorain county, Ohio, Winter studies, 37; Some winter records for Lorain county, Ohio, 20; a new bird for Ohio, 71; Kirtland Warbler (*Dendroica kirtlandi*) again in Ohio, 104; Albino Robins, 109; All day with the birds, 125; Winter birds, 129.
Junco hyemalis, 15, 87, 131, 132.
 connectens, 65.
 oregonus, 65.
 Junco, Oregon, 65.
 Shufeldt, 65.
 Slate-colored, 15, 19, 20, 23, 41, 50, 53, 55, 87, 103, 131, 132, 140.
 Keim, Thomas D., A January Chewink (*Pipilo erythrophthalmus*), 23; Six Generations of Phœbes' Nests, 139; A white-spotted Bluebird's egg, 140.
 Killdeer, 8, 12, 61, 82, 97, 99, 128, 130.
 Kingbird, 64, 85, 100, 104, 128.
 Arkansas, 60, 64.
 Kingfisher, Belted, 14, 63, 84, 99, 128, 130, 132, 141.
 Kinglet, Golden-crowned, 51, 55, 92, 131, 132.
 Ruby-crowned, 67, 92, 99, 129, 131.
 Western Golden-crowned, 67.
 Kite, Swallow-tailed, 82.
 Knot, 31.
 Lämmergeyer, 117, 119, 120.
 Langille, Rev. J. H., Maryland birds, 101; A review of his "Our Birds in their Haunts," 111.
Lanius borealis, 66, 89, 131, 132.
 ludovicianus, 15.
 excubitorides, 66.
 migrans, 89, 130.
 Lark, Dusky Horned, 64.
 Horned, 19, 20, 49, 53, 54, 55, 57.
 Pallid Horned, 64.
 Prairie Horned, 19, 49, 53, 54, 55, 85, 128, 130.
Larus argentatus smithsonianus, 79, 131, 132.
 marinus, 79.
 philadelphia, 133.
 Longspur, Lapland, 50, 53, 57.
 Loon, 67, 79, 131.
 Red-throated, 79.
Lophodytes cucullatus, 61, 79.
Loxia curvirostra minor, 65.
 lucoptera, 22, 65.
 Magpie, American, 64.
 Mallard, 11, 12, 47, 61, 79, 99, 130.

- Mareca americana*, 12, 79.
 penelope, 71.
 Martin, Purple, 88, 99, 129.
 Meadowlark, 14, 43, 49, 53, 54,
 55, 86, 98, 99, 128, 103, 130.
 Western, 64.
Megascops asio, 14, 83, 130.
 macfarlanei, 63.
Melanerpes carolinus, 14, 84,
 130, 139.
 erythrocephalus, 14, 84.
 torquatus, 63.
Meleagris gallopavo fera, 13, 82.
Melospiza georgiana, 88.
 lincolni, 88, 139.
 melodia, 15, 87, 130, 132.
 morphna, 65.
Merganser americanus, 47, 79,
 131.
 serrator, 61, 79, 131.
Merganser, American, 47, 79, 99,
 131.
 Hooded, 61, 79, 99.
 Red-breasted, 47, 61, 99,
 131.
Merula migratoria, 15, 92, 131,
 132.
 propinqua, 67, 74.
 Mills, Wm. J., My Summer
 Boarders, Season 1902, 124.
Mimus polyglottos, 15, 68, 91.
Mniotilta varia, 89.
 Mockingbird, 15, 68, 91, 102.
Molothrus ater, 64, 86.
 Murre, Brünnich, 51.
Myiarchus crinitus, 85.
Neophron percnopterus, 116.
Nettion carolinensis, 12, 61, 79.
 Nighthawk, 85, 100.
 Western, 63.
Nucifraga columbiana, 64.
Numenius hudsonicus, 139.
 longirostris, 61.
 Nutcracker, Clarke, 64.
 Nuthatch, European, 1, 2, 3, 4.
 Pygma, 67.
 Red-breasted, 2, 3, 4, 20, 21,
 51, 53, 67, 92, 99, 129, 131.
 Rock, 1, 3.
 Slender-billed, 67.
 White-breasted, 18, 20, 51,
 53, 55, 92, 129, 131, 132.
Nyctala acadica, 83, 131, 138.
Nyctea nyctea, 84, 131, 138.
Nycticorax nycticorax naevius,
 81.
 Oberholser, Harry C., Review
 of his Catalogue of a Collec-
 tion of Hummingbirds from
 Ecuador and Colombia, 32;
 Review of his "Some New
 South American Birds," 143;
 Review of his List of Birds
 Collected by William T. Fos-
 ter in Paraguay, 144.
Oidemia deglandi, 139.
Olbiorchilus hyemalis, 91, 131,
 132.
 Old-Squaw, 21, 47, 80, 93, 131.
Olor buccinator, 80.
Oriole, Baltimore, 86, 100, 103,
 128.
 Bullock, 60, 65.
 Orchard, 86, 100, 103, 128.
Oroscoptes montanus, 67.
Osprey, American, 83, 127, 128,
 131.
Otocoris alpestris, 19, 20, 49,
 53, 54, 55.
 leucolema, 64.
 merrillii, 64.
 praticola, 85, 130.
 Oven-bird, 90, 100, 102, 129.
 Owl, American Long-eared, 14,
 48, 63, 83, 130.
 Arctic Horned, 63.
 Barn, 48, 83, 130.
 Barred, 14, 48, 83, 130.
 Burrowing, 60, 63.
 California Pigmy, 63.
 Great Horned, 48, 52, 84,
 130.
 McFarlane Screech, 63.
 Saw-whet, 48, 83, 131, 138.
 Screech, 14, 18, 19, 49, 55,
 83, 130.
 Short-eared, 14, 41, 48, 63,
 83, 131, 139.
 Snowy, 84, 131, 138.
Pandion haliaetus carolinensis,
 83, 131.
 Paroquet, Carolina, 84.
Parus atricapillus, 92, 131, 132.
 occidentalis, 67.
 bicolor, 15, 92, 131.
 carolinensis, 92, 131.
 gambeli, 67.
Passer domesticus, 74, 93, 132.
Passerella iliaca, 87.
Passerina nivalis, 65, 132, 139.
 Pearson, T. Gilbert, Review of
 his "Stories of Bird life," 30.
*Pediæetes phasianellus colum-
 bianus*, 62.
Pelecanus erythrorhynchos, 139.
 fuscus, 5, 141.
 Pelican, American White, 139.
 Brown, 5, 141.

- Petrel, Black-capped, 31.
 Petrochelidon lunifrons, 66, 88.
 Peucæa æstivalis bachmanii, 87.
 Pewee, Say's, 60.
 Western Wood, 64.
 Wood, 85, 100, 103, 128.
 Phaethon americanus, 141.
 Phalænoptilus nuttallii, 63.
 Phalarope, Wilson, 100.
 Phasianus torquatus, 93, 132.
 Pheasant, Ring-necked, 93, 132.
 Philohela minor, 12, 81.
 Phoebe, 85, 99, 103, 128, 139.
 Say, 60, 64.
 Pica pica hudsonica, 64.
 Pigeon, Passenger, 82.
 Picicola enucleator canadensis, 22.
 Pintail, 12, 80, 99, 131.
 Pipilo erythrophthalmus, 15, 18, 23, 88, 130.
 maculatus megalonyx, 65.
 Pipit, American, 67, 91, 129.
 Piranga erythromelas, 88.
 ludoviciana, 66.
 rubra, 88.
 Pitangus sulphuratus, 142.
 Plover, Semipalmated, 93.
 Podilymbus podiceps, 78, 130.
 Polioptila cærulea, 92.
 Poœcetes gramineus, 87.
 confinis, 65.
 Poorwill, 63.
 Porzana carolina, 61, 81.
 Progne subis, 88.
 Procellaria pelagica, 141.
 Querquedula cyanoptera, 61.
 discors, 79.
 Quiscalus lugubris, 142.
 quiscula æneus, 86.
 Rail, King, 81, 100.
 Virginia, 12, 61, 81, 100, 128.
 Rallus elegans, 81, 100.
 virginianus, 12, 61, 81, 100.
 Red-head, 93, 99.
 Redpoll, 65, 86, 131.
 Redstart, American, 91, 100, 129.
 Regulus calendula, 67, 92, 131.
 satrapa, 102, 131, 132.
 olivaceus, 67.
 Richmond, Charles W., Review of his "Birds Collected by Mr. C. R. Kloss in the Andaman and Nicobar Islands," 144.
 Ridgway, Robt., Review of his "Birds of North and Middle America," 34.
 Riparia riparia, 88.
 Robbins, Reginald C., Review of his "Bird Killing as a Method in Ornithology," 33.
 Robin, American, 15, 16, 20, 44, 51, 52, 54, 55, 60, 74, 92, 97, 98, 99, 101, 102, 109, 129, 131, 132.
 Western, 67, 74.
 Rotzell, W. E., M. D., Migration of Bluebirds, 20.
 Rynchops niger, 143.
 Salpinctes obsoletus, 67.
 Sandpiper, Baird, 61.
 Bartramian, 82, 99, 128.
 Least, 8, 61, 81, 100, 143.
 Pectoral, 8, 81.
 Semipalmated, 143.
 Solitary, 8, 82, 100.
 Spotted, 8, 61, 82, 99, 128.
 Sapsucker, Red-breasted, 67.
 Williamson, 63.
 Yellow-bellied, 75, 99.
 Sayornis phœbe, 85, 139.
 sayi, 64.
 Scolecophagus carolinus, 14, 86, 131.
 Scoter, American, 31.
 White-winged, 139.
 Setophaga ruticilla, 91.
 Seiurus aurocapillus, 90, 102.
 motacilla, 90.
 noveboracensis, 90.
 Shoveller, 80, 99, 131.
 Shrike, Loggerhead, 15.
 Migrant, 17, 20, 89, 99, 129, 130.
 Northern, 50, 52, 54, 55, 66, 89, 131, 132.
 Tyrant, 142.
 White-rumped, 66.
 Sialia sialis, 15, 20, 92, 131.
 arctica, 67, 74.
 mexicana occidentalis, 67.
 Silloway, Prof. P. M., Review of his "Summer birds of Flat-head Lake," 32.
 Siskin, Pine, 22, 50, 53, 55, 65, 127, 128, 132.
 Sitta cæsia, 2, 3.
 canadensis, 2, 3, 21, 67, 92, 131.
 carolinensis, 92, 131, 132.
 syriaca, 3.
 Skimmer, Black, 143.
 Snipe, Wilson, 7, 8, 9, 10, 12, 61, 81, 99, 131.
 Snowflake, 41, 50, 53, 65, 132, 139.
 Sora, 61, 81, 100, 128.

- Sparrow, Acadian Sharp-tailed, 31, 139.
 Bachman, 87.
 Brewer, 65.
 Chipping, 74, 87, 99, 129, 130.
 English, 17, 55, 93, 99, 121, 122, 123, 132.
 Field, 15, 67, 87, 99, 104, 129.
 Fox, 88, 99.
 Grasshopper, 87, 100, 104, 129, 139.
 Intermediate, 65.
 Lark, 87, 100.
 Leconte, 140.
 Lincoln, 88, 100, 139.
 Nelson, 31.
 Rusty Song, 60, 65.
 Sage, 65.
 Savanna, 87, 100.
 Song, 15, 20, 41, 42, 50, 53, 55, 75, 87, 98, 99, 104, 129, 130, 132.
 Swamp, 88, 99, 129.
 Tree, 19, 20, 23, 41, 42, 50, 53, 55, 56, 87, 103, 131, 132, 140.
 Vesper, 87, 99, 104, 128.
 Western Chipping, 65.
 Western Lark, 65.
 Western Tree, 65.
 Western Vesper, 65.
 White-crowned, 15, 87, 100, 129, 131.
 White-throated, 87, 99, 103, 129, 131, 140.
 Spatula clypeata, 80, 131.
 Speotyto cunicularia hypogaea, 63.
 Sphyrapicus thyroideus, 63.
 varius, 84.
 Spinus pinus, 22, 50, 53, 65, 132.
 Spiza americana, 88.
 Spizella breweri, 65.
 monticola, 87, 131, 132.
 ocracea, 65.
 pusilla, 15, 87.
 socialis, 87, 130.
 arizonæ, 65.
 Stellula calliope, 63.
 Stelgidopteryx serripennis, 88.
 Sterna antillarum, 30.
 hirundo, 61, 79.
 maxima, 142.
 Strix pratincola, 83, 130.
 Strong, R. M., Least Terns, a correction, 30.
 Sturnella magna, 14, 86, 130.
 neglecta, 64.
 Sula sula, 141.
 Swales, Bradshaw H., A Few Wayne Co., Mich. Notes, 138.
 Swallow, Bank, 66, 88, 100, 129.
 Barn, 66, 88, 99, 129.
 Cliff, 60, 66, 88, 100, 129.
 Rough-winged, 67, 88, 100, 129.
 Tree, 66, 100, 129.
 Violet-green, 66.
 Swan, Trumpeter, 80.
 Swift, Chimney, 85, 99, 128.
 Vaux, 63.
 Syrnum nebulosum, 14, 83, 130.
 Tachycineta bicolor, 66.
 thalassina, 66.
 Tanager, Louisiana, 66.
 Scarlet, 88, 100, 124, 129.
 Summer, 88, 124.
 Teal, Blue-winged, 8, 79, 100.
 Cinnamon, 61.
 Green-winged, 12, 61, 79, 99.
 Tern, Black, 100.
 Common, 61, 79, 99, 128.
 Least, 30.
 Royal, 142.
 Thrasher, Brown, 91, 99, 102, 129.
 Sage, 67.
 Thrush, Gray-cheeked, 92, 100, 129.
 Hermit, 15, 92, 99.
 Olive-backed, 92, 100, 129.
 Russet-backed, 67.
 Wilson, 92, 100, 129.
 Wood, 92, 100, 101, 102, 124, 129.
 Thryomanes bewickii, 91, 131, 140.
 Thryothorus ludovicianus, 91, 131.
 Titmouse, Tufted, 15, 18, 20, 51, 53, 55, 74, 92, 104, 129, 131.
 Todus multicolor, 113.
 Tody, Cuban, 113, 114, 115, 116.
 Totanus flavipes, 82, 143.
 melanoleucus, 61, 82, 143.
 Towhee, 15, 16, 18, 19, 20, 23, 88, 99, 129, 130.
 Spurred, 65.
 Toxostoma rufum, 91.
 Tracy, H. C., The Rock Nut-hatch and its nest, 1; The Vultures in Asia Minor, 116.
 Tringa bairdii, 61.
 maculata, 81.
 minutilla, 61, 81, 143.

- Trochilus colubris*, 85.
Troglodytes aedon, 91.
 aztecus, 67.
 fervus, 142.
 Tropic-bird, 141.
 Turkey, Wild, 13, 82.
 Turnstone, 100.
Tympanuchus americanus, 13.
Tyrannus tyrannus, 64, 85.
 verticalis, 64.
Vireo cassinii, 66.
 flavifrons, 66, 89.
 gilvus, 66, 89.
 noveboracensis, 89.
 olivaceus, 89.
 philadelphicus, 89,
 solitarius, 89.
Vireo, Bell's, 31.
 Blue-headed, 89, 100, 129.
 Cassin, 66.
 Philadelphia, 89.
 Plumbeous, 31.
 Red-eyed, 89, 100, 124, 129.
 Warbling, 66, 89, 100, 129.
 White-eyed, 89.
 Yellow-throated, 66, 89, 100,
 129.
Vultur monachus, 116.
Vulture, Bearded, 117, 119, 120.
 Black, 116, 120.
 Egyptian, 116, 119.
 Goose, 116.
 Griffin, 116, 117.
 Gryphon, 116.
 Monk, 117, 120.
 Tawny, 116, 118, 120.
 Turkey, 13, 62, 82, 116, 118,
 130, 138, 139.
 Warbler, Audubon, 66.
 Bay-breasted, 90, 100, 129.
 Black and white, 89, 100,
 104, 124, 129.
 Blackburnian, 90, 100, 129.
 Black-poll, 90, 100.
 Black-throated Blue, 90, 100,
 129.
 Black-throated Green, 90,
 100, 129.
 Blue-winged, 89, 100, 129,
 139.
 Calaveras, 67.
 Canadian, 91, 100, 129.
 Cape May, 89, 100.
 Cerulean, 90, 100, 129.
 Chestnut-sided, 90, 100, 129.
 Connecticut, 91.
 Golden-winged, 93, 100, 129.
 Hermit, 67.
 Hooded, 31, 91, 98, 99, 100.
 Kentucky, 90.
 Kirtland, 104.
 Lutescent, 66.
 Macgillivray, 66.
 Magnolia, 90, 100, 129.
 Mourning, 91, 100.
 Myrtle, 15, 33, 66, 90, 99,
 104, 129.
 Nashville, 89, 100, 129.
 Northern Parula, 89, 100.
 Orange-crowned, 31, 100.
 Palm, 90, 100, 129.
 Pileolated, 67.
 Pine, 74, 90, 100.
 Prairie, 90, 100, 104, 105.
 Prothonotary, 31.
 Sycamore, 90.
 Tennessee, 89, 100, 129.
 Townsend, 66.
 Wilson, 91, 100, 129.
 Worm-eating, 89.
 Yellow, 66, 89, 100, 129, 143.
 Water-Thrush, 90, 100, 129.
 Louisiana, 90, 100, 129.
 Waxwing, Cedar, 22, 50, 53, 56,
 66, 89, 130.
 Weed, Clarence M., Review of
 his "The food of the Myrtle
 Warbler," 33; "The mis-
 sion of the birds," 76; "The
 bird calendar," 111.
 Whippoorwill, 84, 100.
 Widgeon, European, 71.
Wilsonia canadensis, 91.
 mitrata, 91.
 pusilla, 91.
 pileolata, 67.
 Woodcock, American, 8, 12, 81,
 99.
 Woodcock, A. R., Review of his
 "Annotated list of the birds
 of Oregon," 75.
 Woodpecker, Downy, 14, 19, 49,
 53, 55, 84, 128, 130, 132.
 Gairdner, 63.
 Hairy, 19, 49, 53, 55, 84, 128,
 130, 132.
 Lewis, 63.
 Northern Pileated, 14, 67,
 84, 130.
 Red-bellied, 14, 19, 21, 49, 53,
 84, 130, 139.
 Red-headed, 14, 18, 19, 44,
 49, 84, 100, 128.
 White-headed, 63.
 Wren, Bewick, 86, 91, 131, 140.
 Carolina, 20, 50, 52, 75, 91,
 124, 131.

- House, 91, 100, 103, 122.
123, 129.
Long-billed Marsh, 92, 100.
129.
Rock, 67.
Short-billed Marsh, 92, 100
Tule, 67.
Western House, 67.
Winter, 51, 67, 91, 129, 131,
132.
Xenopus albolaryatus, 63.
Yellow-legs, 8, 82, 143.
Greater, 61, 82, 100, 143.
Yellow-throat, Maryland, 91,
100, 104, 129.
Western, 66.
Zamelodia ludoviciana, 88.
 melanocephala, 66.
Zenaidura macroura, 13, 62, 82,
130, 137, 139.
Zonotrichia albicollis, 87, 131.
 leucophrys, 15, 87, 131.
 gambellii, 65.



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CONTENTS.

	PAGE
The Rock Nuthatch and Its Nest. H. C. TRACY . . .	1
Pelicans of Tampa Bay. JOHN W. DANIEL, JR. . . .	5
Food Habits of the Wilson Snipe. BENJ. T. GAULT . .	7
Notes on Some Winter Birds of Arkansas.	
N. HOLLISTER	10
A Song Sparrow's Nest. BENJ. T. GAULT	15
A Columbus Mid-winter Horizon. W. LEON DAWSON .	16
Notes:	
<i>Migration of Bluebirds</i>	20
<i>Some Winter Records for Lorain County, Ohio</i>	20
<i>A January Chewink</i>	23
Some Franklinville Fringillines	23
Editorial	26
Election of Officers	29
Election of Members	30
Least Terns—A Correction	30
Publications Received	30

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Nest of Rock Nuthatch, *sitta pygmaea*, plastered to the rock face, of mud, moistened with the bird's saliva.

THE
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NO. 1.

THE ROCK NUTHATCH AND ITS NEST.

BY H. C. TRACY.

THE Rock Nutchatch,* best known as a Syrian bird, is common as far north as the Black Sea coast, not far from which the following observations were made. The bird is ashy-grey above, with black lores (the stripe extending to the mantle region); the "impure white" of the under parts changes to rust red on the belly and under tail-coverts. The Rock Nuthatch is larger than the common European Nuthatch.

If the European bird is rightly named by the Germans, Kleiber (maker of a mud-wall), the Syrian deserves not this but a better title as an expert clay mixer and moulder. When the climate is dry and fairly warm, an adobe house is good enough for anybody. The Rock Nuthatch found this out long ago. Given a little hollow place in a wall of rock, facing the sun, he will fit over it a cap of mortar so firm, so fast to the rock, that neither wind, nor rain, nor creeping thing can break it down till long after he is through

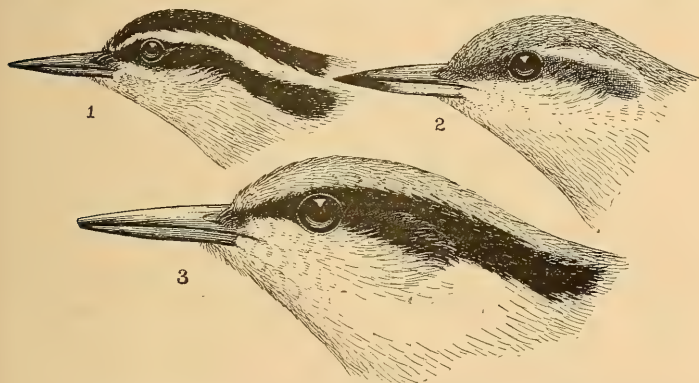
*Given in Brehm as *Sitta neumayeri* (*S. syriaca*, *saxitalis*, references, etc., of other authorities). Brehm's *Thier Leben*, Vol. II., p. 560.



Left-hand figure: Nest of Red-bellied Nuthatch, *Sitta canadensis*, cut out clean, but with pitch from pine plastered above and below hole.

Right-hand figure: Nest of European Nuthatch, *Sitta caesia*. A natural cavity or woodpecker's nest plastered up with mud.

with it. The material is fine clay mixed with plant fibers—incomparably better than ordinary adobe for strength and endurance—so well packed that when dry a stiff knife blade must be used to cut through the inch wall. The outer base of the nest is ten or twelve inches in diameter. The horizontal funnel-shaped entrance is protruded about three inches beyond the domed face, and is, of course, just large enough to admit the body of the bird. The nest is naturally as inconspicuous as the ashy-colored Nuthatch on his grey limestone hunting ground, but he sometimes boldly adorns it with trophies of the chase in the shape of bright red wings of moths attached while the plaster was fresh.



1. Red-breasted Nuthatch, *Sitta canadensis*. Natural size.
 2. European Nuthatch, *Sitta cæsia*. Natural size.
 3. Rock Nuthatch, *Sitta syriaca*. Natural size.
-

The following description* of the common European Nuthatch and his nesting habits will serve for comparison:

“The nest always occupies a hollow; regularly in a tree cavity, exceptionally in crannies of walls or rocks. The wise bird is glad to make use of the timber-fashioned dwelling of the master woodpecker for his baby cradle, but does not permit the door of his dwelling to be larger than is necessary for himself; and to that end he adopts a highly ingenious

*Translated from Brehm's *Thier Leben*, Vol. II., p. 559.

expedient, viz.: to wall up the entrance to his nest, reducing it to a small hole, just large enough for him to slip in and out of. 'This,' reports my father, 'is done with clay or other viscuous earth which, as in the nests of swallows, is moistened, bound and held together with a glutinous saliva. The walling up of the nest cavity soon comes to an end, as he carries lump after lump of clay in his bill, moistens it all over, and sticks it fast in its place. It is just as if a little mason, to lock or obstruct a door, was laying in and making fast one stone after another.'

"This clay wall is two and more centimeters in thickness, and when dry is so firm that it cannot be broken out with the finger, but a chisel must be used if one would burst it. The entrance hole, which is always in the middle of the wall, is circular, and so narrow that a Nuthatch can scarcely creep through. Once let the nest be finished, it is safe from all animal marauders. Only the woodpeckers have the ability to demolish it, and they do so when the nest-hole has been taken from them by a Nuthatch."

The only parallel habit in the American Nuthatches—if, indeed, it is to be compared with mud-daubing—is that of the Red-bellied Nuthatch, who puts a patch of pine turpentine above and below his nest-hole. The nests of the European Nuthatch found, as quoted above, regularly in tree cavities, sometimes in rock-crannies, grade naturally into those of the rock-nesting species; but the latter are the better developed—completely so, in fact, for there is apparently no room for improvement. Whether the tree-nesting species have degenerated from the perfected clay workers, or only indicate the path along which the latter reached their present habits, is a question that is interesting, and very possibly might be answered by those who have more data than the writer. The natural supposition is that the nuthatches are originally birds of the woods, and that where timber was scarce some took to life on the rocky ledges, there learning gradually to build the form of nest best adapted to their environment.

However he came to be the clever fellow that he is, the shy rock-clamberer, with his sprightly manners and clear, ringing trill, is sure to be a favorite with every one that makes his acquaintance.

PELICANS OF TAMPA BAY.

BY JOHN W. DANIEL, JR.

BROWN PELICANS (*Pelecanus fuscus*) are still to be found in fair numbers along the coast of Florida, in spite of the decimating influences with which they have to cope. Although awkward, ungainly birds, one observing them for the first time in their native haunts, is likely to become interested at once in their characteristically peculiar manoeuvres while fishing, diving and soaring. Most of the time their movements are heavy and clumsy, though often extremely graceful, and at times ludicrous.

During December, 1898, while on my way to Cuba, I stopped for a couple of days at Port Tampa, Florida. I had very good opportunities for studying the pelicans, which were abundant in the bay. The first pelicans seen were noticed about dawn, the morning of my arrival, perched upon a series of posts, the remains of an old pier which extended parallel with the shore, about seventy-five yards out from the water line. Upon each post sat a pelican, dimly outlined in the early light. They had probably spent the night perched upon these posts. Later, as the light became stronger, the birds began flying about the bay. Other pelicans joined them, arriving from north and south, until there were at least a hundred individuals present in the neighborhood. Nearly all were intent upon fishing. They flew over the bay in all directions, at the height of from ten to forty feet, scanning the surface for fish. Their flight while fish-

ing appeared heavy and labored; and the act of catching a fish, by dropping down upon it from above, is so very awkward and heavy that one would expect to see grief come to the bird rather than to the fish. Flying above the water, say at thirty feet, a pelican seeing a fish on the surface below, literally falls, with dangling wings, down upon its prey below, not after the manner of a tern or gull, but with sheer abandon and main force, frequently turning a complete somersault in the effort. Such a heavy fall would doubtless result in broken bones were it not for the fact that the birds invariably strike the water upon their breasts, which, being provided with a heavy padding of cellular tissue, afford the necessary protection. Apparently the pelicans seldom failed to secure fish when making these "falls," the resulting thuds of which could be heard at the distance of several hundred yards, the water being struck with such force that it seems probable, in some cases, that the fish are stunned thereby, rendering capture easy. Upon reaching the water, the diving pelican at once begins scooping about with its capacious pouch for the fish. A muscular lunge forward of the neck seems to extend the sides of the lower mandible, the skin of the pouch being stretched to its fullest capacity to form a natural scoop net. When a pelican secures a fish in its pouch or between its mandibles, the head of the bird is thrown backward, the bill pointing upward, and with a struggling, twisting movement of the neck, as if with great effort, the fish is swallowed. The water which is scooped up along with the fish apparently remains in the pouch, and does not stream out at the corners of the bird's mouth, as stated by some writers. It flows out at the point of the bill when the head is inclined downward again, after the fish is swallowed. When searching for fish, the pelicans did not hover above the water, but flew slowly and awkwardly about, executing the tumbling dive or "fall" when the fish were sighted below them.

At the Port Tampa Hotel the water line comes up to the kitchen, which is raised above the water by posts, upon a

sort of platform. The cooks throw scraps of fish and other refuse out upon the water, and the pelicans gather in flocks about the kitchen to secure this food. They had become so tame that while feeding upon the scraps they would allow one to approach within ten or fifteen feet. It was an odd sight to see this flock of wild pelicans, at such close quarters, scrambling and tussling over the food. There was much competition among them, and the younger and quicker birds seemed to get most of the scraps, while the heavier and older birds took whatever they could secure in the hurry and bustle which occurred when a fresh can of scraps was thrown in the water. Having finished the scraps, the pelicans would fly far out in the bay, there to rest upon the water and bathe. Some, apparently for pleasure only, would rise high in the air, setting their wings and coming down in smooth, graceful circles. Late in the afternoon, the greater part of the Pelicans left the bay and disappeared up the coast line, though a number of individuals were seen, at dusk, perched upon the posts along the bay front, where they probably lodged for the night.

FOOD HABITS OF THE WILSON SNIPE.

BY BENJ. T. GAULT.

ARE the feeding habits of the common "Jack," or Wilson Snipe (*Gallinago delicata*), so very well known?

Elisha J. Lewis in "American Sportsman," p. 197, in speaking of the food and habits of this bird, remarks that "their nourishment consists principally of worms and larvæ, which, like woodcock, they extract from rich loamy soil by boring into it with their long and slender bills." "It was formerly very generally believed by sportsmen, and others who pretended to a knowledge of such matters, that snipe

as well as woodcock, support themselves by suction. This, of course, is as erroneous in the one case as in the other."

Mr. Chapman (Handbook of Birds, p. 154), on authority of Mr. Brewster, tells us that "two things are essential to its requirements—ground so thoroughly water-soaked as to afford slight resistance to its long and highly sensitive bill, when probing, and such concealment as tussocks, hillocks, or long grass afford; for, unlike the sandpipers, the snipe rarely ventures out on bare mud-flats, save under cover of darkness. Although less strictly nocturnal than woodcock, it feeds and migrates chiefly by night or in thick weather."

It has been thought advisable, in this connection, to make use of the foregoing quotations, that the remarks to follow might be better understood, which, if new, may throw some additional light upon a most interesting subject.

Our Glen Ellyn lake was unusually low and dry the past season, in consequence of which the autumnal crop of waders was considerably above the average.

Pectorals comprised the bulk, yet there were Solitaires, some Spotted and not a few Least Sandpipers in the lot. Also from two to three dozen Kildeer, both species of Yellow-legs, as well, coming in for a representation.

As if to add still further variety, the Great Blue and little Green Herons contributed their stately presence, while swimmers and divers were accounted for in a flock of sixteen Blue-winged Teal and half as many Dabchicks. It was a busy gathering, to which the well-known "Jacks" added a conspicuous feature during the early days of September.

Barring slight alterations, the several groups of birds in feeding arranged themselves about the lake as follows: first, the outer zone of sandpipers and Kildeer, which apparently picked up a comfortable subsistence from beneath the remains of algae found anywhere upon the flats; second, the snipe in the muddier parts; third, the ducks and herons of the shallows adjoining; and finally the grebes, which showed a marked preference for the deeper water of the lake.

The writer's attention was first called to the Snipes, four in number, September 1, when in company with a naturalist friend, and with a good pair of field-glasses, I had the pleasure of inspecting them at my leisure for some time, the glasses proving a most indispensable article on this occasion.

In habits, as compared with Sandpipers, there is certainly a marked distinction.

The Snipe seemed to select as special feeding grounds the water line just bordering the flats, where the mud was soft and into which they delighted in sinking their bills to the fullest depth. And in withdrawing them they never elevated their necks in true sandpiper style. On the contrary they kept their heads well "chucked down," so to speak, and in moving about from place to place, which they seldom did, however, continued to hold them in the same fashion.

In some respects their probing methods resembled the rooting of swine,—a simple, up and down and forward movement, and if remembered rightly, without lateral twists or side thrusts of any kind, and at times exposing fully one-half of the bill.

Whether the Wilson Snipe actually do resort to the so-called "suction" method of procuring their food, is a question still undetermined in my mind. The glasses, however, brought out the important information that the probing or feeling movements of the bill were accompanied every now and then with a guttural or swallowing motion of the throat, which at times developed into a decided gulp, as though large morsels of some kind were being taken down, and this *without the removal of the bill from the muck.*

Writers allude to the Wilson Snipe as a bird of solitary habits, yet my observations, in this case, led me to think otherwise. On the other hand, they appeared to greatly enjoy each other's company; and to the extent of causing one to think that possibly they were of one and the same brood,—a conjecture doubtless true.

These interesting birds were observed daily for over a week, their fondness for each other being manifested on all

occasions. Once I came suddenly upon two of them together, standing side by side, their bills pointing in one way. They crouched, or squatted, when they saw me, and presently took to wing, but made no sound of any kind or indulged in the customary zigzag flight. They evidently felt settled or had not approached the wild and erratic state.

But shortly after this my observations had ceased, owing to the changed conditions brought about by "the man with the gun"; and on September 10th the last snipe was seen.

In summarizing the foregoing, we observe: First—That the Wilson Snipe occasionally resorts to open mud-flats, unmindful of the cover of darkness, and that its stay is governed by the supply of food; second, it feeds at all hours of the day; third, the "suction" theory of procuring its food, however erroneous it may now seem, really has reasons for some foundation.

NOTES ON THE WINTER BIRDS OF ARKANSAS.

BY N. HOLLISTER.

THE following fragmentary notes on the winter birds of Arkansas are taken from my notes and collections made on three hunting trips in Lonoke, Prairie, and Arkansas counties during the greater part of January and November, 1899, and November, 1900. The part of the state comprising these three counties includes Grand and White River Prairies, large tracts of well-grassed open country, dotted here and there with patches of timber, principally oak, gum, hickory, etc., of varying acreage, from the scattering persimmon clumps and "slashings" to the larger "islands" of wood and vast forests and cypress swamps bordering the prairies and extending for many miles; still almost unbroken and affording shelter and range for deer, bear, turkeys, wild cats, and an occasional panther.

Except for Grand Prairie itself, the country included is well watered, being crossed or bordered by the Arkansas and White rivers, Big and Little LaGrue and Bayou Meto, all of which are fed by many a creek and bayou of varying size. During our first visit in January, 1899, we were blest with rather an oversupply of dampness. The rainfall throughout our stay was something terrific, and after a week's soaking in camp on the White River, near Crockett's Bluff, during which time the rain did not cease for a single hour, we were driven back to town and had to content ourselves with short drives from Stuttgart, where we had made our headquarters. During the two latter trips, however, the weather was simply perfect and we enjoyed many little excursions from town in all directions, of from one to four or five days' duration.

Most of the following ornithological observations were made in Arkansas county, but several times we made trips extending north into Prairie and Lonoke counties. Nothing one could possibly say would begin to overrate the kindness, hospitality, and attention the residents of this district extended to us—perfect strangers as we were. Southern hospitality is proverbial, and no visitor to the prairie regions of Arkansas will find reason to have his faith in it lessened in the least.

Although the number of species found here at this season of the year is, of course, not large, it must not be imagined that in the list as here given any attempt at completeness is considered.

Anas boschas. MALLARD. Very abundant. The mallard is *the* wild duck of this country and, if the rainfall is sufficient, is everywhere. They fly in and out among the trees, alighting in the timber wherever the water remains on the ground, and feed on the "mast" (soaked acorns, etc.), which supplies them with an abundance of food. In January they were all very thin—so much so that they were really unfit to shoot. At that time I noted a bunch, on the depot platform, of fourteen dozen birds, the result of one

and one-half days' shooting by two market hunters, and not one bird in the bunch but would be called a "crip" by a Northern or Western sportsman, so emaciated was their condition. In November, however, they are in most excellent shape and equal in weight to a Minnesota or Wisconsin "corn-fed" mallard.

Mareca americana. BALD-PATE. A very few seen in the bags of the market shooters.

Nettion carolinensis. GREEN-WINGED TEAL. A few seen in January in the bags of market hunters.

Dafila acuta. PINTAIL. A few seen in January.

Aix sponsa. WOOD DUCK. Next to the mallard the commonest duck observed on the Bayou Meto in November, 1899. Found anywhere in oak timber, miles from any stream. It seems odd to flush *ducks* from the tree-tops when quail shooting.

Branta canadensis. CANADA GOOSE. All the geese seen wild were evidently typical *canadensis*—one killed in January certainly was.

Branta canadensis hutchinsii. HUTCHIN'S GOOSE. Two captive geese in the possession of parties in Stuttgart, winged the year before our first visit, are among the smallest geese I have ever seen, and are typical *hutchinsii*.

Rallus virginianus. VIRGINIA RAIL. One seen in January, 1899.

Philohela minor. WOODCOCK. Common in both January and November. Often found in the perfectly dry woods miles from any water, while quail hunting.

Gallinago delicata. WILSON'S SNIPE. None seen in November, but common in January. The abundance of the Jack Snipe depends entirely on the rainfall.

Aegialitis vocifera. KILLDEER. Common. January and November.

Colinus virginianus. BOB-WHITE. Nowhere that I have ever hunted are the quail so abundant as they are in these counties. They are everywhere. It is a typical, a perfect quail country, and with reasonable game laws they should

continue to thrive forever. The birds are small and dark as compared with northern quail. Some specimens really remind one very much of the Florida birds. Their habit of treeing very easily and their short lowering flight at times bring to mind the little "Bob" of the Florida woods. They are strongly inclined to melanism. One specimen has a perfect jet-black throat-patch. Careful measurement of length in a large series gives the following results:—

	♂	♀
Largest	9.90	10.20
Smallest	9.00	9.00
Average	9.66	9.72

Average length of wing is ♂ 4.39, ♀ 4.38. The bills of a large per cent. are entirely jet black.

Tympanuchus americanus. PRAIRIE HEN. The prairie chickens were very common on all the open prairies during our first two visits, but seem to have sadly suffered from too persistent hunting. The sportsmen from Memphis, Little Rock, Pine Bluff, Hot Springs, and even St. Louis, flock here on the opening day (Sept. 1), and the range being comparatively small, this rather isolated colony of America's finest game-bird seems almost threatened with extinction in the near future. The opening date for shooting should evidently be much later in the season to afford much protection for the game.

Meleagris gallopavo fera. WILD TURKEY. Still fairly common. A good many were killed in November, 1900.

Zenaidura macroura. MOURNING DOVE. Common all winter.

Cathartes aura. TURKEY VULTURE. Abundant.

Circus hudsonius. MARSH HAWK. Common.

Buteo borealis. RED-TAILED HAWK. Some of the Red-tails were evidently typical *borealis*. Common.

Buteo borealis harlani. HARLAN'S HAWK. I take it that this race is fairly common here; some specimens shot, at least, were typical.

Buteo lineatus. RED - SHOULDERED HAWK. Tolerably common. This is preëminently a "hawk country."

Haliaeetus leucocephalus. BALD EAGLE. A few.

Falco sparverius. AMERICAN SPARROW HAWK. Very common.

Asio wilsonianus. AMERICAN LONG-EARED OWL. Common.

Asio accipitrinus. SHORT-EARED OWL. A few.

Syrnium nebulosum. BARRED OWL. Common.

Megascops asio. SCREECH OWL. Tolerably common.

Ceryle alcyon. BELTED KINGFISHER. Common.

Dryobates pubescens medianus. DOWNY WOODPECKER. Common. Although no specimens were made up, it is probable they are of this race.

Ceophloeus pileatus. PILEATED WOODPECKER. Common in the heavily wooded part of Arkansas county bordering the lower Bayou Meto. I have had several in one tree directly over me. Only a few in other parts of the county, although I took one specimen almost in the very city limits of Stuttgart. They are all of the southern race.

Melanerpes erythrocephalus. RED-HEADED WOODPECKER. Very common. In November the young are one of the commonest of birds.

Melanerpes carolinus. RED-BELLIED WOODPECKER. Common.

Colaptes auratus luteus. NORTHERN FLICKER. Abundant.

Cyanocitta cristata. BLUE JAY. Abundant.

Corvus americanus. AMERICAN CROW. Not common—only a few seen.

Agelaius phoeniceus. RED-WINGED BLACKBIRD. Abundant.

Sturnella magna. MEADOWLARK. Abundant.

Scolecophagus carolinus. RUSTY BLACKBIRD. Common.

Scolecophagus cyanocephalus. BREWER'S BLACKBIRD. A few seen along the prairie roadsides in company with the last.

Zonotrichia leucophrys. WHITE-CROWNED SPARROW. A few observed in January.

Spizella pusilla. FIELD SPARROW. Very abundant in November.

Junco hyemalis. SLATE-COLORED JUNCO. Abundant.

Melospiza melodia. SONG SPARROW. Abundant.

Pipilo erythrophthalmus. TOWHEE. Common.

Cardinalis cardinalis. CARDINAL. Common.

Lanius ludovicianus. LOGGERHEAD SHRIKE. Common.

Dendroica coronata. MYRTLE WARBLER. Very abundant all of November.

Mimus polyglottos. MOCKINGBIRD. Common, more so in November than in January.

Parus bicolor. TUFTED TITMOUSE. Common in heavy woods about Bayou Meto.

Hylocichla aonalaschkae pallasii. HERMIT THRUSH. A few in November and also in January.

Merula migratoria. AMERICAN ROBIN. Common in roving flocks. Sometimes abundant and again not to be found at all.

Sialia sialis. BLUEBIRD. A few.

A SONG SPARROW'S NEST.

BY BENJ. T. GAULT.

THE following recorded happenings to a Song Sparrow's nest found on our place, during the season of 1900, may be of interest and perhaps worthy of repetition here.

June 17.—I discovered a Song Sparrow's nest in one of our gooseberry bushes; it contained four young sparrows and one young Cowbird—all but a few days old.

June 19.—Examined the nest again and found one of the young sparrows hanging to the bush, just below the nest, dead. It had been crowded out.

Same day I removed the young Cowbird, killed it, and made a skin of it.

June 21.—Three young sparrows doing nicely.

June 25.—Young had left the nest and were in care of parents.

July 10.—Same nest reoccupied by the same pair of birds, slight repairs being made on the inside, and now contains four eggs. One of the birds sitting closely and loth to leave the nest.

July 15.—Nest contains three young and one unhatched egg. Eyes of young birds not open. One young apparently hatched to-day.

July 18.—Young sparrows getting their eyes open. Fourth egg did not hatch.

July 22.—Sparrow's nest robbed and demolished, but a slight trace of it being left. Possibly the work of some prowling cat.

The feature in this instance was the rearing of one and the hatching of another brood in the same nest by the same pair of birds the same season. Such an occurrence is not a common one, according to my experience, although I have known of Robins doing a similar thing.

A COLUMBUS MID-WINTER HORIZON.

BY W. LEON DAWSON.

THERE were big doings in town today. A governor, or somebody, was to be inaugurated. Brass bands crashed, militiamen marched and counter-marched, officers of the day strutted and bawled orders, while Masonic grandees waved gorgeous plumes from top-heavy headgear (they tell me), and *hoi polloi* enjoyed themselves generally. I wasn't there. I'd rather see a squad of Towhees or an aerial proces-

sion of Blue Jays than a gubernatorial staff under full sail. The governor—dear man, the one sober, modest, capable person in all the chaos of regalia, and noise, and aspiration—he didn't miss me, much. Excited by reports of a winter bird paradise off north-east, I set out at 9 a. m., in spite of a brisk north wind and threatening snow, at a temperature of 21° Fahr. Arrayed in two sweaters and an incommunicable number of trousers, I was determined to hold carnival with the birds. I took oath to report them faithfully, and their silent admiration was as flattering to my appreciative soul as the applause of the gaping crowds down town could possibly have been to his excellency.

A romantic little ravine opening to the east off North High street proved to be all that my father had reported it in point of scenic interest. If one can fancy himself reduced to the dimensions of a squirrel or a Cardinal, the rugged outlines of the shale banks sustain the illusion of a wild gorge in the mountains. The "run" winds about, too, in most delightful fashion; so that as one rests in the last covert, near the head, preparatory to emerging upon *terra plana*, one may fancy that he has come a half day's journey in that half mile, so perfectly has every feature of illusion been rendered in miniature.

As I paused near the ravine's head to note a few common-places, a Migrant Shrike rose from the ground of a briar tangle hardby and settled near. He was visibly annoyed at the intrusion; but I did not care for that until I had settled that he bore no mark of vermiculation and was to all appearance veritable *migrans*. He drew away reluctantly, and the cause of his regret was manifest in a half-eaten English Sparrow which he had purloined from a nearby gamin roost. Eat thy fill, O Lanius, of our toothsome English friends. Let thy conscience rest until some fledgling reformer, suffering from ornithological strabismus announces a better use for them.

A ten-acre wood lot abutting upon three North Broadway back-yards (unusually, but gratefully plebeian as to manure

piles and such) proved to be a genuine mid-winter paradise. Scarcely had I set foot within its precincts when I lighted on a heavy blackberry tangle, as being the probable rendezvous of Towhee. Sure enough *Pipilo erythrophthalmus erythrophthalmus* (à la Ridgway) was there. He sprang out of cover and shouted "Marie!" in good-natured pretense of dudgeon, while he settled his black cap over his ears and adjusted his tawny fur cape about his immaculate front. I did not go through that blackberry patch. The Shrikes would have been licking my giblets off the briars for a week if I had persisted. Three Towhees rewarded my several feints, and I was content to take the rest on faith.

The woods were alive with birds. Even when a light snow blew horizontally through the trees, Red-heads scolded and hammered, Flickers flashed their golden wings from tree to tree, or probed the ground; while Blue Jay, ubiquitous Blue Jay—there were forty of him at the least—reveled in the general hubbub.

An unusual din in which Blue Jay's voice predominated led me to the north-west corner of the wood. The center of attraction proved to be a certain hole, or crevice, about twenty-five feet high in an ash tree. The Blue Jays retreated as I advanced to the shelter of a commanding tree-bole; but the rest of the birds held their ground. I watched while Red-headed Woodpeckers took turns peeping into the hole and shuddering. Once a Red-head yelled "Ouch!" and jumped a yard or more. Chickadees clamored, "Let-me-see! Let-me-see!" while Titmice sputtered their indignation. A pair of White-breasted Nuthatches inspected the locality minutely. One murmured, "Horrible! the hypocritical old cut-throat!" And the woods quaked and shivered assent.

Of course I knew what was up and I came forward to take a hand in the game. A couple of smart raps from a stick brought a weary and somnolent Screech Owl to the mouth of the hole. He blinked aimlessly about and sank back. "Well," thought I, "he's slow. I'll go up and interview

him." The tree was of considerable girth and almost bare of limbs. I tried to keep an eye on the hole, but somehow, when I got there, panting fiercely, the hole contained "nothing but leaves." Sir Owl had flitted, chuckling noiselessly in his silken sleeve.

The wood yielded in all, to a cursory examination, sixteen species of birds—and half the time it snowed. A twenty-acre beech woods beyond was still more hastily examined. It yielded additional Towhees, a troop of Cardinals, and a swarm of Juncos.

The hawks, which were several times sighted, were believed to be Red-tails. Both were in winter plumage, and diagnostic tests were hard to apply. One bird, seen at a considerable distance, showed irregular blotches below on a white ground. He was especially marked by a brilliant white rump, and that in a light which made the color of the tail itself uncertain. The other bird was uniformly light below, save for black-tipped primaries and a dusky tail.

The grackle was discovered in a bush clump of an open, wind-swept wood lot. He kept well to himself and seemed to be a little logy, though apparently sound of wing and limb.

A wisp of Horned Larks, passing over, was quite likely to have contained, or to have *been*, Prairie Horned; but I count only the more probable species in a record hunt.

The commonest bird in all Ohio during the winter months, Tree Sparrow, was the last to show up. When I had my old high water mark of twenty-two species in my note book, I searched high and low for the missing bird. At last he quavered hospitably from the densities of a weed thicket, but I declined his invitation to tarry. Twenty-three species in one day breaks my winter record. Let us hear from the next man.

The horizon for the four hour trip follows:

Red-tailed Hawk, 2.
Screech Owl.
Hairy Woodpecker.

Downy Woodpecker.
Red-headed Woodpecker.
Red-bellied Woodpecker.

Flicker.	Cardinal.
Horned Lark.	Migrant Shrike.
Crow.	Carolina Wren.
Blue Jay.	Brown Creeper.
Bronzed Grackle.	White-breasted Nuthatch.
Junco.	Red-breasted Nuthatch, 1.
Tree Sparrow.	Tufted Titmouse.
Towhee.	Chickadee.
Song Sparrow.	

Columbus, Jan. 13, 1902.

NOTES.

MIGRATION OF BLUEBIRDS.—In several different sections of Montgomery and Delaware counties, Pa., on November the 12th, 13th and 14th, I observed large numbers of Bluebirds (*Sialia sialis*). On each of the days mentioned seeing many flights, varying, I should say, from a half-dozen to fifteen or twenty birds in each flight, and the general direction taken by all was southward. The predominant weather during this time was clear and cold, and the prevailing winds were from the north-west. I never before noted such an extensive migration of these birds. A few years ago large numbers of Robins were reported in migration in the Eastern United States, which I observed in this region, and thinking the present Bluebird migration might be likewise noted in other sections, leads me to report this little bit of migration data; although the present migration of Bluebirds, as I observed it, was not so extensive as that of the Robins.—W. E. ROTZELL, M. D., Narberth, Pa.

SOME WINTER RECORDS FOR LORAIN COUNTY, OHIO.—Never since the writer began studying the birds of this county, eleven years ago, has a winter been so fruitful in surprises as the present one. Until the 14th of December

there was nothing in the weather to prevent our hardier birds from remaining with us, nor anything to drive those southward which remain well northward by preference. On the 14th the storm which had been raging in the north and west came down upon us in the shape of dust snow, with rapidly falling temperature. On the day before, indeed as late as 11 o'clock, the temperature was above 70°. The fine snow penetrated almost like spray, leaving nothing uncovered. For the next eight days the temperature scarcely rose above zero even during the day. The snow-covered land offered but poor living for the beasts and birds that chose to remain. Some birds came to us from the north, and some which should have gone south remained. The mild weather which followed afforded such relief that all remained until now. The records which follow are those most worthy of notice.

Cardinal (*Cardinalis cardinalis*.) Hitherto the Cardinals have been well distributed in the river gorges and heavier woods, two or three in a place in company with the other winter troops. This winter they seem to have a community of interests, and must be looked for in special places only and in considerable numbers. Thus far we have discovered but two companies, one of 14 and one of 19 individuals.

Old-squaw (*Harelda hyemalis*.) To my knowledge this is the second winter record for this duck for this county. The cold weather did not continue long enough to cover the lake with ice, so this species and the American and Red-breasted Mergansers were able to find food enough without going further south.

Brown Creeper (*Certhia familiaris fusca*.) The several records for the present winter, with those of previous winters, establishes this species as a regular winter resident. It is not common, but may be found in twos and threes in favorable places.

Red-breasted Nuthatch (*Sitta canadensis*.) Like the preceding species, the experiences of this winter make it certain that this bird winters regularly in our county in small

numbers. It is not wholly confined to the river gorges, but is more certain to be found there than in the woods away from them.

White-winged Crossbill (*Loxia leucoptera*). I am delighted to record this species for the county this winter. There is a previous record, but it is my first experience with this bird of the frozen north. An even half dozen were found feeding upon the cones of the hemlocks which border one of the most picturesque glens of the county. A second visit to the same place resulted in further study of these erratic birds. Their notes and songs once heard could not be forgotten nor confused with any other of our winter birds. The general trend of the song is toward that of our Goldfinch, but it is louder and more forceful. The strong call, "weet! weet!" closely resembles that Goldfinch note, but the guttural "ch-r-r-r," while flying, is distinctively crossbillian. While feeding there was a soft conversational chatter.

Canadian Pine Grosbeak (*Pinicola enuncleator canadensis*). The eleven year search for this interesting bird was rewarded on the first day of the new year. In company with 45 Cedar Waxwings he was dining upon the berries of the red cedar on Vermillion river. The peculiar little whistled alarm,—half song, half alarm—is unlike anything any other bird tries to do. All of these extreme northern birds have a sort of personality not shared by our more southern species. It is, perhaps, best illustrated by the difference between a fish in the warm waters of the summer and the same fish in the icy waters of mid-winter. They are that compacted energy which sets our blood tingling before we know it.

Pine Siskin (*Spinus pinus*). The Pine Siskin should not be a rare bird in this county, but the paucity of records for the past half dozen years makes any record of it seem unusual. On January 7, 1902, when I visited the glen where the White-winged Crossbills were first seen, with the four which were there on the seventh was a company of Pine Siskins, feeding in the same trees, and chattering noisily. I

counted fourteen of them, but probably missed some, because they were very wary, not permitting a close approach.

LYNDS JONES.

A January Chewink (*Pipilo erythrophthalmus*). To-day, January 26, 1902, I observed a Chewink in company with a flock of Slate-colored Juncos and Tree Sparrows. I have noticed the abundance, or rather the great number of Blue Jays this winter; also the six or eight Red-headed Woodpeckers which have remained in one section of a woods. Last fall I was unable to identify the dusky headed ones until Dr. C. C. Abbott straightened me out by informing me that they were the immature Red-heads. I recorded fifteen species during the walk, the best I have done for a long while.

THOS. D. KEIM.

Wissahickon, Philadelphia.

SOME FRANKLINVILLE FRINGILLINES.

[With apologies to Bro. R. R., who is, after all, a very good fellow.]

FRANKLINVILLE, O., Jan. 16, 1902.

DEAR MR. EDITOR: Thinking your readers might be interested in a contribution from an humble fringillologist, I append a sample horizon for publication in the twentieth (current) volume of the Ancient Murrelet.

Realizing many years ago the utter futility of trying to compass the whole field of ornithology, I settled upon the Fringillidæ for special work. This was not so hopeless an undertaking in the crude days of the Trinomialists, some twenty years since; but now that science has made such colossal strides, numbering, as it does, the sub-subter-sub, and infra-subter-sub-species of sparrows in America alone by the thousands, I find myself obliged to confine my attention to the reporting of a winter's day, and a very cold one at that.

Horizon taken on six-mile trip north of the village; 6 A. M.—6 P. M.; temperature 0° Fahr.; wind N. W.; sky overcast.

1. *Junco hyemalis hyemalis ohioensis jejunus*.

2. *Junco hyemalis hyemalis ohioensis circumspectus*.

The Ohio Hungry Juncos are to be found, commonly, in farmers' back-yards and about hay-stacks in cold weather; while the Ohio Wary Junco keeps to the woods and flees incontinently upon human approach.

3. *Spizella monticola monticola monticola solitaria*.

4. *Spizella monticola monticola monticola sporophila*.

5. *Spizella monticola monticola monticola rara*.

The local Tree Sparrows divide themselves naturally into three groups: those which are seen only occasionally (*S. m. m. m. rara*); those which when seen scatter readily and take to the trees (*S. m. m. m. solitaria*), and those which feed sociably in weed pastures and have royal good times together (*S. m. m. m. sporophila*). It is comparatively easy to classify these birds, since Whichway's excellent "Monograph of the Spizellæ" set us the example of taking account of mental and social traits in taxonomy.

6. *Melospiza cinerea melodia indigena brushpilei*.

7. *Melospiza cinerea melodia indigena cattailswampi*.

We are to be congratulated upon the sensible introduction of Latinized Americanisms in modern nomenclature. The dead languages were becoming unpresentably threadbare some dozen years ago.

Besides being readily separable on the ground of habitat, these birds are further distinguished by certain physical characters. For instance, the "mummy brown" of the pileum of *M. c. m. i. brushpilei* is quickly referable to the complexion of Rameses II.; while that of *M. c. m. i. cattailswampi* takes us back to somewhere in the Third Dynasty. The "broccoli brown," too, of *brushpilei*'s middle rectrices is that of cabbage raised on high, open ground, while that of *cattailswampi* corresponds to the particular shade of the succulent vegetable when grown in muck—as we should expect.

8. *Pipilo erythrophthalmus erythrophthalmus erythrophthalmus erythrophthalmus*.

Although we have no other varieties the five Towhees seen to-day were, curiously enough, of one infra-subter-sub-species. In fact, they were all under the same blackberry bush. Inasmuch as we are at the northern range of the resident birds, we justly account them typical of the species.

9. *Cardinalis cardinalis cardinalis cardinalis cardinalis*.

10. *Cardinalis cardinalis cardinalis eriensis jonesii*

11. *Cardinalis cardinalis cardinalis eriensis eastsisteri*.

12. *Cardinalis cardinalis cardinalis eriensis cedrimu-croniensis*.

13. *Cardinalis cardinalis cardinalis eriensis chigoeinfestus*.

14. *Cardinalis cardinalis cardinalis eriensis semigravisvinocatawbæ*.

Besides typical *C. c. c. c. cardinalis*, which is the resident form, I met a few of the many species driven back from the Erie shore by recent severe storms.

Although not coming strictly within my line, I cannot forbear to mention the casual appearance of *Lanius ludovicianus migrans strongi wilson-chapteri i-s-s-sp. nov.* This bird was frightened from a meal of *Passer domesticus brassyus gallicus execrabilis*. It may be that his sanguinaceous capistrum was due to that fact; but pending further investigation, I prefer to name him in honor of the immortal Chapter.

Faithfully yours,

FRANKLIN.

THE WILSON BULLETIN.

A Quarterly Magazine Devoted to the Study of Living Birds.

Official Organ of the Wilson Ornithological Chapter of the Agassiz Association.

Edited by **LYNDS JONES.**

Published by the Chapter at Oberlin, Ohio.

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EDITORIAL.

A decade has passed since the organization of the corresponding Wilson Ornithological Chapter of the Agassiz Association on a basis of co-operative study of the life histories of our birds. The results attained have proved that the scheme of co-operative study is practicable and profitable, and the publication of the results have proved an incentive to many outside the Chapter to enter the field for active service. We have reason to be proud of our record.

From the first we have stood boldly for the study of life histories as a legitimate part of scientific ornithology as opposed to the purely popular. Because we have chosen, usually, to use the vernacular rather than the scientific names of the birds, and have aspired to some degree of literary form in expression, it does not therefore follow that we have been unscientific in method. The results have proved the contrary. Technical language has its legitimate place, but we hold that it is not an essential to scientific results. We must not be understood as opposed to systematic and structural ornithology. On the contrary, we are heartily in sympathy with the effort to fashion a stable system of classification. But that is not our field. Systematic ornithology must

necessarily very largely deal with the dead bird. Our chief concern is with the living bird.

The systematist of today cannot do his work accurately without a great amount of material at his disposal, which involves large collections of skins and bodies. Such collections are coming more and more to be brought into certain centers which are readily available to the comparatively few who are best trained to do that sort of work. This is as it should be. Let me reiterate, then, that this is not our field. We have neither the material nor the training to pursue this line of investigation. But the ten years of work which we have done has raised up those who are well fitted to conduct investigations in the line of life histories, and to search out general ecological problems. Here lies our strength. Here we have proved ourselves. We must push the work already so well begun if we hope to reap its certain fruitage.

The calendar winter is now past, and with it the season of stagnation in bird study for many of us. As the spring draws on interest awakens, calling for special effort in bird study. It seems too bad that this awakened interest and study should fail to count for much year after year, simply because it stands for individual study only. By combining our efforts upon the March migrations we should be able to make the work tell something. The migrations are generally so scattering, and the birds therefore so prominent when they do come, that comparatively little difficulty is met in recording each species when it arrives. Can we not give unusual heed to the migrations for this present March, noting the first arrivals and their numbers, and the increase in numbers of each of the several species as the days pass? Note, also, when the females come, if that is possible, and any movements northward of those species which have come down from the north to spend the winter with us. Can we not make this a month when the number of individuals of each species shall be counted and recorded upon each trip into the fields and woods? There is no better way to learn the birds than to make a count of the individuals seen every time that is possible. If you will send your notes to the editor, early in April, they will be worked into a report for the June number.

There are several lines of work which have been begun but never completed, for one reason or another. Two of these, at least, were too large subjects for the equipment which we had. The members engaged in the direction of these studies have been lost track of, so that work cannot be carried to completion. There

is one line of study, however, which was worked into a final report, which needs further attention. That is the report upon the Warbler Songs. Much has been learned about some of the species not then known, and no doubt the interest which that report awakened has led to a more general study of warbler songs than ever before. We propose to pursue that study further, and solicit notes from any person who has given the songs of the warblers any attention. Select your own method of representation, and give your own interpretation. The only caution which needs to be given is to be certain that you know your bird before you record its song as certainly belonging to a certain species. Such notes placed in the hands of the editor will be thankfully received and given careful attention at once, and finally will be worked into a revised edition of Warbler Songs.

The present number of THE WILSON BULLETIN marks the beginning of its ninth volume. Its pathway has not been strewn with roses. Its beginning was small and worthy of little notice. With the passing years it has grown into its own place as a magazine of Ornithology with an individuality not shared by any other bird magazine ever published. It has been the means by which the Wilson Chapter has made known its steady policy of co-operation in the study of living birds, a policy which finds expression in the many state organizations for the express purpose of carefully studying the birds of the state. We believe it is true that these state organizations have grown out of the Wilson Chapter. In entering upon the present year with the improvements which this number shows, we believe that the influence of the Chapter's work will find larger expression in a larger circulation, and will so commend itself to those who have not thus far become acquainted with our methods and results, that many will desire to unite with us in this plan of study. Certainly it is worthy of the careful consideration of every student of birds. The little each one can do will count in the final result.

Members and readers may begin to tire of the iteration and reiteration which the editor has indulged in about the necessity of counting the birds in your region. A little thought will give some idea of the great importance which a study, such as Mr. Burns' "A Sectional Bird Census," is to the cause of Ornithology. It forms the only true basis for an estimate of the birds inhabiting any similar region. The possibilities which lie in the future for determining the influence of changed environment, of the adaptability of the bird to changes which are sure to come, and all the problems which grow out of the whole question of the in-

fluences of civilization, larger civilization, upon the birds, are immeasurable. If we could scatter such sectional bird censuses over the country at large, their contribution to the economic questions involved in the relation of birds to all human interests would be immense. Perhaps not many of us feel capable of making such a census. It is a great undertaking, and fraught with many difficulties which do not appear at first sight. But there is one thing which every person can do, wherever he may study the living birds, and that is to keep a record of the numbers of individuals of each species seen every time the birds are studied. Even this will not be possible with some species at some times of year, but with many species it is entirely possible at any time. Those which are so numerous that an accurate count is impossible, do not need such careful attention.

This is the field which we can occupy, and for which we are organized. Not only will your own note-books be far richer, but they will make possible comparisons with the work of others in other regions, and form a basis for estimates of your actual bird population. Before you refuse to accept the force of this argument, sit down and think just what you mean when you say that a certain species is common, or abundant, or rare. If you are satisfied with that sort of information, this request is not directed at you, but if you feel that these terms can be given some definite meaning by work such as we have suggested, we shall be glad to welcome you to the ranks of those who will do this sort of work. Surely we can agree that the work is of great importance, and so do what we can to make our note-books mean something definite.

ELECTION OF OFFICERS.

Eighteen (18) ballots were cast for officers of the Chapter, for 1902, resulting in the following selections, viz.:

President—Lynds Jones, Oberlin, Ohio.

Vice President—N. Hollister, Delavan, Wis.

Secretary—John W. Daniel, Jr., 3146 Q street., N. W. Washington, D. C.

Treasurer—F. L. Burns, Berwyn, Pa.

Executive Committee—John H. Sage, R. M. Strong, H. C. Ober-

BENJ. T. GAULT, *Judge of Election.*

I find the above statement correct. R. M. STRONG, *President.*

ELECTION OF MEMBERS.

The following names are proposed for active membership in the Wilson Chapter. Adverse votes should be sent to the Secretary, John W. Daniel, Jr., 3146 Q street, Washington, D. C.:

R. L. Baird, Oberlin, O.

Alex. W. Blain, Jr., 131 Elmwood avenue, Detroit, Mich.

Frank Bruen, 264 Main street, Bristol, Ct.

Homer L. Bigelow, 330 Commonwealth avenue, Boston, Mass.

LEAST TERNS—A CORRECTION

In the W. O. C. BULLETIN, No. 36, the writer stated that some least terns (*S. antillarum*) "were found breeding in Martha's Vineyard Island, near West Chop, by Dr. H. Smith, late in July." This information came to me through a man who was supposed to have seen the terns. Later in the summer, after I had sent the above mentioned note to the publisher of the BULLETIN, I talked to Dr. Smith himself about the terns, and learned that the breeding place was not near West Chop, but on the farther side of Martha's Vineyard, near Katama. R. M. STRONG.

PUBLICATIONS RECEIVED.

STORIES OF BIRD LIFE. By T. Gilbert Pearson.

This book is brimful of interesting sketches of birds, many of which have been individualized, as the Arredondo Sparrow Hawk, Ruffle-breast (Logger-head Shrike), Bibneck, the Plover, etc. While primarily for the young student, it is written in such a manly, sympathetic and accurate vein, without the least trace of offensive sentimentalism, as to be profitable and pleasant reading for all. It is emphatically the better sort of popular ornithological literature. The reader might, perhaps, wish that the perpetrators of the indiscriminate slaughter on the college campus and elsewhere, as so feelingly portrayed by the author in the closing chapter, might be turned over to the tender mercies of the Audubon Society. Professor Pearson permits the reader to draw his own inference after submitting the facts. The text is charmingly illustrated by John L. Ridgway and Miss Elsie Weatherly.—F. L. B.

BIRDS OF MADISON COUNTY, NEW YORK. By George Charles Embury, B. S. (Presented as a thesis for the degree of Master of Science, Colgate University, 1901.)

This is a careful and intelligent list of 192 species and subspecies, a number of which are quite rare. Black-capped Petrel, American Scoter, Black Brant, Knot, Hudsonian Godwit, Red-bellied Woodpecker, Nelson's and Acadian Sharp-tailed Sparrows, Plumbeous Vireo, Orange-crowned and Hooded Warblers; and is followed by a hypothetical list of 16 more species of which no satisfactory records have been made, but by reason of their occurrence in neighboring counties, future observations may reveal them. Based chiefly upon five or six years' active field work by the author, supplemented by all other data obtainable, an extremely creditable paper has resulted; one that will require little correction in the future. The description of the physical conditions, vegetation, etc., of the district, furnish the facts from which we can more than surmise the reason of the scarcity or abundance of certain species. The author is to be congratulated upon the appearance of his paper, and also upon his able assistants, whose aid and suggestions he so generously acknowledges.—F. L. B.

PROCEEDINGS OF THE NEBRASKA ORNITHOLOGISTS' UNION, at its Second Annual Meeting, Omaha, Neb., January 12, 1901.

Although young as an organization, the Nebraska Ornithologists' Union exhibits every mark of being among the foremost of State Associations in active field work. The proceedings are preserved in a substantial volume of one hundred pages and ten plates. In addition to the matter belonging strictly to the organization—abstract of minutes, constitution and by-laws, list of members, and President Trostler's address—one of the most important papers is by Prof. Lawrence Bruner, on "Birds in Their Relation to Agriculture." Superintendent Wilson Tout offers some sensible suggestions in relation to "Ornithology in Schools." "A Late Nest of the Ruby-throated Hummingbird," by Frank I. Shoemaker, and "Young Rose-breasted Grosbeaks," by Elizabeth Van Sant, are interesting accounts of young in nest. The oologist will be pleased with "Notes on the Breeding of the Prothonotary Warbler, and Observations on Trail's Flycatcher," by M. A. Carriker, Jr.; "Breeding Habits of Bell's Vireo," by Merrit Cary, and "Birds that Nest in Nebraska," by Prof. Lawrence Bruner. Edwin H. Barbour touches upon "A Peculiar Disease of Birds' Feet Observed in Central Nebraska," and Henry B. Ward on "The Internal Parasites of Nebraska Birds." On "Migration Records and Our Nebraska Records," R. H. Wolcott unfolds a scheme for the "accurate numerical valuation of terms relating to the abundance of species and for an accurate and uniform method of

recording migration observations." A number of shorter papers are equally valuable.—F. L. B.

CATALOGUE OF A COLLECTION OF HUMMINGBIRDS FROM ECUADOR AND COLOMBIA. By Harry C. Oberholser. From the proceedings of the U. S. National Museum, Vol. XXIV., pages 309-342.

The collection of hummingbirds here described was "gathered by Messrs. Claude Hamilton and Walter Goodfellow during their trip to Ecuador and Colombia, in 1898 and 1899." With the possible exception of that brought together by Baron, it is probably the finest single collection ever made, comprising, as it does, 1136 specimens, almost all in fine condition of plumage, and accompanied by proper data. Although some of them are from Colombia, by far the greater number were collected in Ecuador. One hundred and nine species and sub-species are represented." Three new forms are described. Notes touching the life history of some of the species, by the collectors, add interest and value to the paper.—L. J.

BIRD-LORE'S FIELD IDENTIFICATION BLANK.

Just as we go to press this useful little pocket blank appears. It is intended for those who are beginning the study of birds—live birds—but will prove useful to those who are trying to extend their acquaintance beyond the ordinary. Cuts of the heads of five species appear on the front cover, all natural size, while the back cover contains the contour topography of a Bluebird, with every part named. A six-inch scale on the outside of this cover completes the equipment for field study, so far as a notebook can. The first page of instructions for field work is followed by fifteen pages, upon which descriptions are to be written. Each of these pages contains a place for locality, date, haunt, length, size and shape of bill; length and shape of tail, color (twelve parts of the body), voice, movements, etc., with the reverse side for remarks. This little blank should prove useful to those who are anxious to know how to begin the study of birds. It may be obtained from the J. Horace McFarland Co., Crescent and Mulberry Sts., Harrisburg, Pa., for ten cents a copy.—L. J.

SUMMER BIRDS OF FLATHEAD LAKE. By P. M. Silloway, Principal Fergus County High School, author of "Some Common Birds." Prepared at the University of Montana Biological Station, under the direction of Morton J. Elrod.

This 83 page bulletin is accompanied with 16 half tones representing the region studied, and a number of nests and eggs of the region. The 128 species recorded are about equally divided between the strictly western species and those which range pretty much over the entire country. But that part of Montana lies

almost upon the dividing line between some of the forms, and at the western range of others.

The author concludes: "Of the 123 species included in the foregoing list, it is probable that at least eight are fall migrants, breeding in the far north and entering the United States early toward the close of summer. It is likely that the remaining 120 species breed in the Flathead Lake region, or near the northern border of the state. At least thirty of the birds listed for the region are permanent residents; the others are summer residents only, spending the cold months in more southern localities."

The annotations under each species are well considered, for the most part, and add materially to the value of the paper. We trust that a further study of the birds of the region will give the altitudes at which the different ones nest, and to which they range.—L. J.

THE FOOD OF THE MYRTLE WARBLER. By Clarence M. Weed and Ned Dearborn. New Hampshire College Agricultural Experiment Station, Technical Bulletin No. 3, November, 1901. Pages 117-128.

In this contribution to economic ornithology, remarks upon the life history of the Myrtle Warbler, as found in New Hampshire, are followed by a detailed study of about forty specimens taken at different times and places during the month of October, 1899, supplemented by the examination of the stomach contents of two specimens taken, one in March the other in May, 1900. A detailed summary table gives the following result in percentages: Insecta, 29.65; Arachnida, .02; vegetable matter, 62.25; undetermined matter, 7.13. The authors state that this rather large percentage of vegetable matter is due to the abundance of the myrtle berries during the autumn months, but that during spring, when such a source of food is almost gone, a much larger proportion of insects is consumed. It thus becomes clear, when we know that the vegetable matter eaten has no economic value, that the Myrtle Warbler is worthy of protection at all times. The destruction of bird life to such a moderate extent, for the purpose of determining its true status as an aid to man, we hold justifiable. But once the status is determined, there can be no justification for any further sacrifice for study looking to the same end.—L. J.

BIRD KILLING AS A METHOD IN ORNITHOLOGY. By Reginald C. Robbins. Cambridge, Mass.

From the pen of a layman who has the welfare of the birds upon his heart, we have twelve pages of rather abstruse reasoning to prove that "Bird Killing as a Method in Ornithology" is not justifiable. If we rightly understand the author's argument, it may be briefly stated thus: Since every bird is an individual, and as

an individual therefore different from every other bird, and therefore representing, in its individual capacity, some line of variation, it will be impossible to determine the ultimate variations in ornithological classification until the last individual bird has been critically examined. Manifestly this is a logical reasoning. It is possible, however, to place a limit upon the extent to which variation shall be recognized in classification. It may be safe to assume that in any well-defined region of limited extent, where practically all conditions are the same throughout this region, that there will be no variation worthy of notice among the species inhabiting it. But of course there will be a degree of variation. If, as the author argues, we must go into these slight individual variations, then his argument that all birds are doomed stands out clearly.

We are pleased to note that the author does not place the ban upon killing birds for any purpose whatsoever. He recognizes the claims of those who are pursuing lines of original investigation, but limits the privilege to those persons. His argument, therefore, has the more weight for this conservative attitude. We believe that the time when collecting for the sake of building up a small private collection for selfish purposes, with no notion of making a contribution to our knowledge of birds by means of that collection, lies in the past. We have outgrown that.

While the author assumes an extreme attitude toward those who kill birds for "scientific" purposes in general, we believe the note of warning is not wholly out of place, and should be one of the influences for checking the tendency to unduly reduce the bird life of the country.—L. J.

BIRDS OF NORTH AND MIDDLE AMERICA. By Robert Ridgway. Part I. Fringillidæ. United States National Museum, Washington, D. C., 1901.

It is a pleasure to record the appearance of a book which treats of the Fringillidæ of the whole of North America, and to note that it is but the first of its kind. When those which are to follow are finished, we shall have, for the first time, the whole North American bird fauna. The check-list of North American birds has always been misleading to the uninitiated. The unfortunate necessity of putting limitations upon a well-defined geographical region has, of course, been manifest, but we trust that this necessity may be disappearing with the better facilities of travel and the greater activities of naturalists.

This volume of 715 pages, and some 30 pages of prefatory matter, supplemented by 20 admirably executed plates illustrating the heads, wings, tail and feet of type species, is one of the most important books upon birds published. It fitly opens the new century as a most important work.

This volume is concerned with a single family, the Fringillidæ

(sparrows, finches, etc.), and the "attempt is made to describe every species and sub-species, or definable form, of bird found on the continent of North America, from the arctic districts to the western end of the Isthmus of Panama, together with those of the West Indies and other islands of the Caribbean Sea (except Trinidad and Tobago), and the Galapagos Archipelago; introduced and naturalized species being included, as well as accidental or casual visitors."

The list includes 389 species and sub-species. Of these 389, upwards of 230 are given three scientific names. The increase of trinomials over previous lists and catalogues is partly due to the extension of the application of trinomialism to each member of a group in which a trinomial occurs, instead of distinctly separating off the type form by using for that one the binominal name. This practice is entirely logical, but we cannot but deplore its adoption into a system which is already too cumbersome. Furthermore, it seems almost an introduction to a system of further multiplication of scientific names to the quadrinomial or n th power. We cannot overlook the fact that there are intergradations between species and higher and lower groups also, but it seems entirely feasible and sane to place a limit upon what shall be called a recognizable form by determining what that limit is from a practical standpoint. It makes no practical difference whether the particular Cardinal in question is a *Cardinalis cardinalis cardinalo-floridanus*, or a *Cardinalis cardinalis floridano-cardinalis*. Furthermore, the adoption of an ultra scientific system which can be used only by the expert in color values and careful measurements of many specimens, is divorcing the scientific from the practical. Science can lay claim to recognition, in these enlightened days, only by its contribution to the welfare of the largest possible number of people. We no longer have use for a science which is wholly for scientists. There is a middle ground between the scientific and popular which is both accurate and understandable.

The author's name is sufficient guaranty of the accuracy and completeness of the work. The bibliographical references alone almost stagger us with their suggestion of the work involved. Add to this the time and work involved in the examination of specimens in the National Museum and other collections to which he had access, and some conception of what this volume represents of work and study may be obtained. We trust that the author's life may be spared to complete what has been undertaken, and of which this is the first of eight volumes.

The difficulty involved in beginning this series with the highest instead of the lowest group in the contemplated series, does not seem great when it is known that the nomenclature followed is that of the A. O. U. If, as we have reason to hope, this nomenclature will again be revised so that we may have a wholly logi-

ical catalogue instead of one thrown together with little reference to logical sequences below the higher groups, the question of nomenclature or sequence would be the same wherever the beginning should be made.

The author has the hearty thanks of all who have the interests of a more comprehensive literature relating to the birds of this continent at heart. There is no "Imperialism" involved in the invasion of Mexico and the Central American States for ornithological research.—L. J.

Amateur Sportsman, The, XXVI., No. 4, 1902.

American Monthly Microscopical Journal, The, XXIII., Nos. 1 and 2, 1902.

American Ornithology, II., No. 1, 1902.

Bird-Lore, IV., No. 1, 1902.

Birds and Nature, XI., Nos. 1 and 2, 1902.

Bulletin No. 57, Pennsylvania State College Agricultural Experiment Station.

Maine Sportsman, IX., No. 12, 1902.

Osprey, The, I., No. 1, 1902. New series.

Plant World, The, V., No. 1, 1902.

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The Wilson Bulletin

No. 39

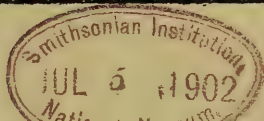
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CONTENTS.

	PAGE
Bird Studies in Lorain County, Ohio. LYNDS JONES	37
A Preliminary List of the Birds of Yakima County, Washington. WM. LEON DAWSON.	59
Incubation Period of the Mocking Bird. JOHN W. DANIELS, JR.	68
A Bird New for Ohio. LYNDS JONES	71
Editorial	72
Election of Members	74
Notes:	
<i>Boulder, Colorado, Birds Increasing</i>	74
<i>Lakewood, N. J., Notes</i>	74
Publications Received	75
Errata	76

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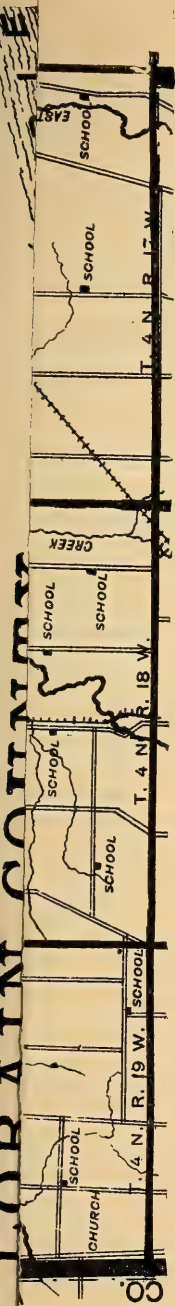
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Articles of general interest relating to bird life are solicited. They should be in the hands of the editor not later than the 20th of the month preceding publication.



LORAIN COUNTY OHIO.

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----- Electric Railway.



THE
WILSON BULLETIN

A QUARTERLY JOURNAL OF
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VOL. IX.

JUNE, 1902.

No. 2.

BIRD STUDIES IN LORAIN COUNTY, OHIO.

WINTER STUDIES.

BY LYND S JONES.

There is a fascination about the study of the hardy birds who brave the winter's dangers and discomforts, which no other season of the year affords. We feel not only gratitude but a sort of kinship to these our brothers in feathers who seem to refuse the comforts of winter tropics that we may not be left wholly deserted in the ice and snow for three long months. We must feel a certain respect for them, too, when we reflect that they have never a fire to warm them and to soften their frozen food. There is a constant battle with the cold. The sun is their only fireside.

The study of birds in winter, if one studies them under all conditions, is pretty sure to be attended with discomforts at times. But if we dress for the work it serves rather to increase our love for the season in what it brings of increased capacity for work, than dread for it. There is a sense of being superior to the weather, whatever the temperature, which is exhilarating and invigorating. We ought to feel the better in health for breathing air from which the moisture has been well frozen out.

Winter gives up many secrets of the birds which must otherwise be always hidden from us. It would be rare indeed that the birds which walk much should write their activities so we could read them, without snow. But about what can be read from bird tracks we are not concerned in this paper. At no other time of year do the purely social instincts of the birds show themselves so well, and can be read so easily. Birds are far more approachable than at any other time except when nesting. The nesting season, however, presents the other side of the bird nature—the egoistic or the family life as distinct from the social life. But it is not about this side of the winter study that I wish to speak now. Rather let us first see what and how many birds there are about us during the winter months.

In the deductions which follow it must be understood that they are based upon strictly winter records. Generally that means December, January and February; but sometimes winter did not begin until mid-December, and sometimes it ended a week or more before the close of February. In only one instance did it begin in November and in only one extend into March. It is comparatively easy to determine the end of winter by the appearance of the first migrant birds, but it is often difficult to know at what time the winter begins. In every case of doubt the record has been thrown out.

The work upon which this paper is based began in 1896, and has been carried on uninterruptedly every winter since. After a very little experiment it became apparent that the plan to make a complete census of even a quarter of the county was impracticable. Consequently several representative regions were selected and these were as thoroughly worked as possible. The accompanying map of a part of Lorain county will serve to show the general outlines of the ground covered. No. 1, may be known as the Chance Creek route; No. 2, Beaver Creek route; No. 3, north overland route; No. 4, Oberlin south-east route; No. 5, Oberlin north-east route. Of course other parts of the county were traversed and

studied, but far less thoroughly than these. Furthermore, the records for these five routes are so nearly the same as regards number of trips and time spent on each trip, that a fairly reliable comparison may be drawn.

Route No. 1, represents the sand-stone knoll and Chance Creek gorge region of the county, where coniferous trees are much in evidence, and where vegetation is allowed to have its own way largely, thus affording the best possible covers in severe weather. The lake shore part of this route and of the two following ones overlap somewhat and the records for the lake have been kept distinct from the inland parts of the routes. Route No. 2, is distinctively a stream gorge route, and represents scarcely anything but the Beaver Creek fauna. It is a rich fauna. Route No. 3, is just as distinctly an overland field and woods route with no stream gorge anywhere, because no considerable stream is crossed. Route No. 4, and 5, represent the field and woods region bordering the shallow gorge of the west branch of Black River. They are somewhat different, both including some of the deeper woods of this part of the county. These five routes are fairly representative of the county, at least west of the west branch of Black River and the main part of the river from Elyria to the lake.

Oberlin, the focus of these five routes and always the starting point for the day's work, lies in a plane region 250 feet above Lake Erie. Into this plane region the streams have cut their winding courses, each from a pattern of its own. Black River and its tributaries, above the junction of the east and west branches, has formed a shallow and broad gorge, in which abandoned channels have formed long narrow marshes or lagoons with more or less heavily timbered borders. Here the pawpaws flourish, forming thickets for the winter sparrows. The whole course of this stream and its principal tributaries is fringed with sycamore trees of considerable size. Wild grapes and the bitter sweet are not numerous here, but many apple orchards bordering or

wholly within the wide gorge, afford feeding grounds for many winter birds.

Chance Creek, a tributary of Vermillion River, forms a strong contrast to the river just described. Its gorge is narrow and deep, with heavily timbered, almost precipitous slopes. The more level borders of this gorge are timbered with hickory and oak, a few beach trees, besides others, and a bountiful supply of wild grapes and the bitter sweet. Orchards also border the gorge, alternating with cultivated fields. The gorge itself is plentifully supplied with red and white cedars and hemlocks, besides many species of deciduous trees. Here evergreen timber, tortuous course, and 100 feet depth combine to form an ideal protection from any winter blast. Food, also, is abundant. The many sheer precipices exposed to the sun's heat, afford snowless retreats in the worst storms. The remainder of this route to the lake shore lies across open fields and upland woods over the sandstone knolls and deserted quarries where no attempt is made to hinder the rank and tangling vegetation. No better winter residence could be imagined for the thicket-loving birds than these tangles. One cannot beat through them. Persuasion is the only successful method of dealing with the birds here.

Beaver Creek presents the characters of Black River in its upper and lower reaches, but modified Chance Creek characters along its middle third. Here one finds two small hemlock groves which afford shelter for the hawks and owls. Crows also winter here. Food seems to be abundant everywhere. A day spent along its course is sure to bring surprises.

The uplands of the county, or the parts of it studied, are a succession of four fairly level terraces to the lake shore. Except along the course of the old lake beaches the country is about three-fourths cultivated fields to one-fourth woodland. The woods are, generally speaking, the remnants of the original forest which occupy land hardly fit for the plow if it were cleared. It is either swampy, or too thin soil.

That is not true of all the woodland, however. The courses of the old lake beaches are untillable, in places, and in such places are a wild tangle of trees, bushes and vines, into many of which even the cattle are unable to penetrate. Seeds, berries and grapes abound. These stony old beaches vary in width from a few rods to many rods.

The lake shore is bordered by high clay banks except where the streams have cut an exit. The back water from the lake has caused these channels, which seem to have been considerably deeper in former times, to partially fill with wash, thus forming bogs and swamps of various sizes and considerable length, which are now largely overgrown with wild rose, a species of water willow and alder bushes, in some places forming impenetrable thickets. The annual plants grow here in bewildering profusion and astonishing rankness. This is the favorite winter retreat of Song Sparrows. The woods which border the swamp at Oak Point, the mouth of Beaver Creek, harbor the most of our woods-haunting winter species. It is second only to the stream gorges in the richness of its population.

The lake and its immediate shore furnish scarcely more than the water birds. Usually the Short eared Owl may be found hiding underneath the overhanging banks, and not infrequently Snowflakes are found on the sand or upon the railroad track which lies close by. An occasional Crow, and one flock of seven Bob-whites are found here, making their records in the sand. Late in the winter the lake shore is a pretty frigid region, and a good deal of a wilderness. Its ice-covered surface affords no feeding places for gulls and ducks.

The work of recording the species and individuals consisted simply in walking over the same ground, time after time, recording the individuals of each species as they were seen. It is usually possible to count the individuals. Even the large companies of Tree Sparrows can be made to pass a given point leisurely enough to make an accurate count possible. There is some complication, to be sure, when Jun-

coes, Song Sparrows and Goldfinches are also a part of the company. But in such a case the species of fewer individuals should first be counted and recorded, and lastly the whole company counted. Subtraction will then give the number of Tree Sparrows. A large part of the work was done in company with Rev. W. L. Dawson, during the first four years, and with Mr. R. L. Baird, during the last two. It is needless to say that counting large companies of birds can be more accurately done by two working together than by one alone.

A glance at the weather for the months covered by this study may add interest to the discussion, and perhaps offer some explanation of the fluctuations from year to year.

Temperature alone in winter probably has relatively little to do with the winter movements of birds, unless the cold is intense; but cold, attended with a blanket of snow or ice—a frequent combination—is a condition to be reckoned with. In the following summary of weather conditions during the winters, I shall lay stress upon the conditions which would cause southward movements, or later in the winter, cause the winter birds on the ground to remain, leaving the reader to infer that when nothing is said about the weather it was not of such a character as to cause any marked movements of the birds.

The winter of 1895-6 opened during the first five days of December with snow and nearly zero temperature. A warm wave followed, removing the snow. The 11th brought us nearly six inches of snow and temperature a little below zero during the night of the 13th. This snow blanket began to grow thin on the 16th, and was gone after the rain of the 18th. This winter weather had a marked influence upon the birds, which was not offset by the summer weather which continued to almost the end of the month.

There was nothing in January which materially influenced bird movements, although three mornings during the first week the temperature was near the zero mark. A marked cold wave, with below zero temperatures in the middle of

February, served only to hold the winter birds from drifting north. There was not sufficient snow to cover their food.

During the winter of 1896-7 there was little snow at first, but severe cold in the Lake Superior region during the first week in December, and snows there, drove many northern birds southward, bringing into this region the usual winter fauna at the beginning of the winter.

January, 1897, opened like spring, but became snow-bound on the 5th, and only succeeded in releasing itself on the 17th in a thunder-storm. This release was followed, two days later, by the severest weather of the winter, reaching 16° below zero on the 25th; the month closing below zero. The strong contrast between January and February induced some of the hardier birds to move northward by the 17th of February, thus closing the winter. The temperature hardly fell below freezing after the first week of February.

The winter of 1897-8 did not fairly begin before the middle of December. There was just cold and snow enough during the last days of November and the first days of December to settle the somewhat frothy bird population, but not enough to drive any birds from the north down to us. The remaining days of December caused no changes in the bird population, because there was not enough snow to cover the food, nor long continued cold.

January, 1898, presented no interesting features except a thunder-storm on the 12th. There was much warm weather, but it came too early to have much influence upon the birds south of us. Severe cold in the Lake Superior region, about the 13th and 29th, tended to hold the birds steady in this region. February began severely cold and with snow, became spring-like during the second week, and was cold, for the month, the remaining days. The winter was not severe enough to bring us any unusual birds, nor to drive the Mourning Doves and Meadowlarks south.

Winter began, 1898-9, on November 23d, with snow and cold. Snow during the first and second weeks of December, and severe cold during the second week made the birds

settle down to solid winter conditions. The warm days during the last week came too late to influence the birds. It is worthy of record, however, that their food was so abundant that the Red-headed Woodpeckers remained in considerable numbers.

January, 1899, was in no wise unusual. Warm during the first week, cold during the second, warm during the third and closing cold, with more or less snow during the month, tells its story of any lack of influence upon the birds. With February it was very different. The first and second weeks were severe in the extreme. At Oberlin the temperature was scarcely above zero any morning during the first fifteen days. Following the cold came genuine spring weather, bringing Robins and Bluebirds on the 20th, and thus closing the winter.

A snow storm on December 4th to 6th ushered in the winter of 1899-1900. Another snow storm from the 13th to 16th, and a period of snow from the 26th to the 30th completed the winter records of this month. The remainder of the month was unusually mild. There was nothing unusual among the birds. January, 1900, was a continuation of December, until the last four days brought a cold wave and snow, the storm extending well into the first week of February. There were no bird movements. February was a month of sharp contrasts, ranging from 67° on the 9th to 4° below on the 27th, with two well marked cold waves: one in the third week and one in the fourth. There was no movement of the birds northward until March 7th.

The winter of 1900-1 began with snow in the north on November 12th to 15th, driving some birds southward at that time, but winter weather did not prevail in this region until December 13th, which was the culmination of the first real cold wave. The month presented no marked features.

January, 1901, opened with a crusted snow covering the ground, causing the absence of the carnivorous birds, except the owls. Mourning Doves were forced south by this complete blanket upon their food supply. For the rest of the

month, and for February, the temperature fluctuated between 56° at noon of January 10th and 3° on the mornings of February 23 and 28, but with no decided fluctuations of cold and warm waves. Snow covered the ground during the larger part of the month, arresting any tendency to northward movement before the end of the first week in March.

The winter 1901-2 was in a hurry to begin. Snow storms on November 5th and 6th, 13th to 17th, 19th and 23d, in the Lake Superior region, aided in the early beginning of winter conditions here. The winter birds were practically established on a winter basis early in November. Continued cold in the north region, combined with below zero temperatures here in the middle of December and on the 21st, brought about unusual occurrences in the bird world. Clearly the appearance of the Pine Grosbeak and White-winged Crossbills was due to this early severe weather and snow. January, 1902, was not peculiar, except for the absence of the regulation thaw, and the consequent almost continuous cold weather.

From the foregoing account of the weather conditions it will be seen that but one of the winters treated began early and continued wintry with little intermission, if any, and that this winter was the only one during which there were distinctly notable happenings in the way of the influx of the far northern species. It may be fair to infer that given similar conditions again there would be similar results.

The actual time covered from which these records are taken is January 1st, 1896, to January 15, 1902; during the winter season, of course. But the year 1896 does not figure in the court of individuals of the several species, because very meagre records of the individuals were kept during that year. Likewise, only the months of January and February, 1900, count in that year, because nothing was done during December, 1900.

Taking, then, one-half of each of the two winters represented in a single year, the number of species for each year stands as follows: 1896, 19; 1897, 36; 1898, 40; 1899, 35; 1900, 30;

1901, 42. And for the first fifteen days of 1902, 35. The number of trips taken during these years is as follows: 1896, 9; 1897, 11; 1898, 12; 1899, 10; 1900, 5; 1901, 14, 1902, 5. The number of species seen during this time reaches the rather startling number 65. That is fully one third as many as have ever been recorded during any entire year and is nearly two-fifths of all the species recorded for the county.

A more accurate record would include a single winter during which the conditions of temperature and weather and the food supply, would be far less variable than during parts of two winters. The records follow: 1896, 19; 1896-7, 37; 1897-8, 35; 1898-9, 41; 1899-00, 32; 1900-1, 34; 1901-2, 42. The trips for the corresponding times were: 1896, 7; 1896-7, 7; 1897-8, 13; 1898-9, 12; 1899-00, 8; 1900-1, 9; 1901-2, 10. Of course there were some records made without any definite effort to get away from the village.

Comparing the five routes to determine which is richest in species, we find that during the time covered by the study there have been seen at Chance Creek, 39 species; Beaver Creek, 35; north overland, 22; south-east, 30; north-east, 32; while 12 have been recorded on the lake and 11 within the limits of Oberlin. The average number of species recorded for each of these five routes gives a slight advantage to Beaver Creek over Chance Creek, and a decided advantage to the stream gorges. Chance Creek, 20; Beaver Creek, 21; north overland, 17; south-east, 15; north-east, 14. One might expect the south-east and north-east routes, to be richer than the north overland route; since they touch the Black River gorge, but the old lake beaches more than compensate for any advantage that the shallow gorge might offer. The route is a longer one, also.

This comparison clearly proves the greater richness of the steep sided and deep stream gorges in species which regularly live there during the cold weather. The records for a series of years also prove that more species not regularly found in the county in winter resort to the stream gorges

when they do visit us. There is this to be said, however. During mild weather, especially when the ground is not covered with snow, fewer species are to be met in the river gorges and more of them are scattered over the uplands. The protection which these gorges offer is clearly the influence which calls the birds to lodge there. Other things being equal, food is more abundant and easier to get upon the uplands.

Let us turn, now, to the numbers of individuals which are more or less regularly found along these five routes during the winter days. It will not be interesting to treat each of them separately, but rather give the totals for all of the routes, with the deductions that may follow. In these totals of individuals let it be understood that they are *averages* for the five years of study, of all of the notes taken together ending January 15, 1902. For some of the more unusual resident species this amounts to a pretty accurate census, since they are found in a few localities only, but with those species which range over considerable territory in their quest for food, it is merely an average of those recorded during the several trips. It is useful as a guide to the haunts of the species, and serves to illustrate the relative abundance of the species as compared with others. The species, with their average numbers and a few remarks upon their mode and places of occurrence, follow.

American Herring Gull, 17; found on the lake only.

American Merganser, 10; on the lake only, and usually absent in late winter.

Red-breasted Merganser, 4; see the last species.

Mallard, 3; on the lake, and rather irregular in winter.

Old-squaw, too variable to assign numbers. Sometimes many winter on the lake.

Ruffed Grouse, not seen for three years, formerly found at Chance Creek.

Bob-white, 95; a small flock in almost every brushy pasture. Increasing.

Mourning Dove, 11; found near barns or where barn manure is scattered.

Marsh Hawk; irregular near the lake. One usually seen every winter.

Cooper's Hawk, irregular, but usually recorded during the winter.

Sharp-shinned Hawk; the records show but one each winter near woods. It is probably more numerous than the record shows.

Red-tailed Hawk, 7; almost anywhere over woods and streams.

Red-shouldered Hawk, 11; like the last but more frequent.

Broad-winged Hawk, 2; usually near the lake, but irregular.

American Rough-legged Hawk, 2; like the last. Usually flying over fields.

Bald Eagle, 2; the two usually in the vicinity of a nest near the lake.

Golden Eagle; twice seen in winter at the lake shore.

American Sparrow Hawk, 19; more frequent at the lake, but seen hovering over almost any field.

Pigeon Hawk, 3; always happened upon, usually when flying.

Barn Owl; one died in a barn near Oberlin.

Long-eared Owl; scarce. A colony of six recently found in a deep gorge tributary to Black River.

Short-eared Owl; one or two usually found at the lake shore. Occasionally seen inland also.

Saw-whet Owl; recorded only for Oak Point on the lake shore.

Barred Owl, 5; these five have regular dwelling places—two at Chance Creek, one in a wood north of there two miles, one in the south woods near Oberlin, and one in a wood south of North Amherst. Outside of these five routes there are at least five others known.

Great Horned Owl, 2; one in the south-east route, one in the north-east.

Screech Owl, 3; confined to Oberlin village so far as known. One has been recorded several times from the north-east route, and one in Chance Creek gorge once.

Hairy Woodpecker, 29; found wherever the troops of small winter birds are. That means in woods or weedy fields.

Downy Woodpecker, 70; like the last, but far more numerous.

Red-headed Woodpecker; not a regular winter resident. When it does remain it resorts to the deep woods, and is numerous there.

Red-bellied Woodpecker, 14; found in nearly every considerable woods.

Flicker, 13; generally distributed, frequently in towns, and about farm houses.

Prairie Horned Lark, 104; Horned Lark, 46. These two forms are scattered over the fields when there is no snow, but resort to the fields where barn manure is scattered when the land is snow bound. They are at the lake shore also.

Blue Jay, 50; pretty generally distributed, but more numerous in woods.

American Crow, 30; more frequent in stream gorges and in the vicinity of the slaughter houses, or where stock is fed.

Meadowlark, 26; more numerous at the lake shore, but in many sheltered fields.

Rusty Blackbird, one female was taken at Oak Point February 13, 1897.

Bronzed Grackle; one has been seen in Oberlin all winter for four years.

Pine Grosbeak; one found at Chance Creek, Jan. 1, 1902.

Purple Finch, 28; almost wholly confined to the stream gorges in winter. Once in woods near Oberlin.

American Crossbill; irregular, but recorded for Oberlin and Chance Creek.

White-winged Crossbill; six found feeding on hemlock cones on Black River Jan. 4, 1902.

American Goldfinch, 193; the flocks are generally large and range almost anywhere, but are more often seen in the

deep woods and stream gorges. A few scattering individuals are not infrequently met with anywhere.

Pine Siskin; irregular as a winter resident. Often with Goldfinches, or in flocks of few to many individuals in river gorges.

Snowflake, 20; usually found after severe north-west storms, in fields.

Lapland Longspur, 10; this and the last species are generally found with the flocks of Horned Larks, seldom by themselves.

Tree Sparrow, 600; this number is given to indicate that this is by far the commonest winter bird. The flocks are found in every woods and in many fields. Between Oberlin and lake Erie, in any direction, there are probably a thousand Tree Sparrows.

Slate-colored Junco, 106; almost invariably with the Tree Sparrows, but far more often in the stream gorges. The number given is an average of those actually recorded, and fairly represents the proportion to Tree Sparrows.

Song Sparrow, 33; one or more in almost every grass-grown thicket. More numerous in the lake shore swamps than elsewhere.

Cardinal, 30; largely confined to the stream gorges. Until the present winter usually found in nearly all considerable woods in twos and threes, but now they seem to be gathered in large companies in or near the stream gorges. 1902 has thus far yielded 25 for Chance Creek and 23 for Black River. An evident increase.

Cedar Waxwing, 52; likely to be seen anywhere, but more often at Chance Creek.

Northern Shrike, 4; this is a census. One near Oberlin, or in it, one on Black River below Elyria, one on Beaver Creek at South Amherst, one near the lake shore north of Chance Creek.

Carolina Wren, 3; another census. One at Chance Creek, two south of North Amherst in Beaver Creek. Only

recently arrived in the county. There may be another below Elyria on Black River.

Winter Wren; one recorded in Ely park at Elyria.

Brown Creeper, 6; there is probably one or more in every large woods, and from one to four in each stream gorge. The number given represents only those actually recorded.

White-breasted Nuthatch, 50; in all woods and in town. Undoubtedly this is a low estimate for this species.

Red-breasted Nuthatch, 3; one at Chance Creek, one on Black River below Elyria, one at Oak Point. Others are likely about.

Tufted Titmouse, 48; in almost every woods. Probably more in winter.

Chickadee, 70; more generally distributed than the last. Common in town.

Golden-crowned Kinglet, 10; recorded only for Chance Creek, Black River and Oberlin. Probably more numerous.

Robin; one regularly winters in Oberlin.

Bluebird; one or more found every winter of the study, usually in Oberlin, but there is one record for Chance Creek.

To this list must be added two accidental records.

Horned Grebe, one found on the streets of Oberlin in an exhausted condition, its gizzard crowded full of small rubber bands. It died.

Brunnich's Murre, four captured at Lorain, December 25, 1896, by Mr. A. Hengartner.

Others than these might be recorded, but their occurrence would not fall within the limits set.

Eliminating, for the purpose of determining the census of the region covered, all but the species which are regularly found every winter, or almost every winter, there remain fifty species. Among these fifty there are several whose numbers can be pretty accurately given for the ground covered by these five routes, because they are confined to known places. These are:

American Herring Gull, 17; on Lake Erie only.

Bald Eagle, 2; at their eyrie near Oak Point.

Great Horned Owl, 2; in two deep woods, southeast and northeast of Oberlin.

Bronzed Grackle, 1; in Oberlin.

Northern Shrike, 4; as already given.

Carolina Wren, 3; as already given.

Robin, 1; in Oberlin.

Of the remaining 44 only averages for these five routes can be given. But the work done outside of these routes proves that they are fairly representative of all of the territory covered, and so represent the average bird population for any given region of like extent in this part of the county. There is little reasonable doubt that the whole county is also fairly represented in this region. There may be deeper and more extensive woods in the eastern part than we know here, but there is certainly not more coniferous timber, nor more favorable places for a large percentage of the birds.

It is needless to say that there is here no basis for any sort of an estimate of the whole bird population of the county. All that can be said is that anywhere in the county one might expect to find an equal number of birds under equal conditions. The territory covered is far too little in proportion to the whole to state more than this. But there is one important consideration which this censo-horizon work leads to. It is the possibility which it holds out for a solution of the perplexing question of the meaning of the commonly used terms "common," "rare," "abundant," etc. It affords a basis for assigning definite values to these terms. But that is a task far too great to be adequately considered as an incidental part of another paper. It is deserving of a separate paper, which I hope may be forthcoming at no distant day. Until these wholly indefinite terms can be given some definiteness, can they be used to convey any intelligence to others than those who personally know the region spoken of.

The smaller land birds, at least, are gregarious to a greater or lesser extent. Some are naturally gregarious within the

species, some within the families, as the Icteridæ, or black-bird group. Sometimes this instinct is hardly apparent, but with some species it is very marked, the birds of a species even nesting in communities. It is, perhaps, suggested in the species which usually show faint traces or none, by the community of interest exhibited at the call of distress from any bird. In the winter this faint instinct shows far more prominently than at any other season with the birds as a whole. Then the smaller woods birds habitually go in troops or companies. Some species are habitually found together, or found in these troops, while others are more independent and wander from the troop when occasion seems to demand. It must not be supposed that when I say that some species are habitually found together that therefore they may never be found alone. That would be carrying the statement over into the impossible, but it is true that certain species are rarely separated in the winter months. It is also true that these same troops of species are the leaders of troops during the height of the spring warbler migration. The point I wish to make is, that birds are not, as a rule, scattered helter-skelter about any region. They are more evenly distributed over any given region during the period of nesting than at any other time.

The species which almost always form a bird troop in winter are as follows: Chickadee, White-breasted Nuthatch, Tufted Titmouse, Downy Woodpecker, Hairy Woodpecker, Blue Jay. With these are often associated the Red-bellied Woodpecker, Flicker, Song Sparrow, Cardinal, Tree Sparrow, Junco, Goldfinch, Red-breasted Nuthatch and Brown Creeper. Still rarer species which may be attracted by the food rather than by a desire for company, may be mentioned: Cedar Waxwing, American Crossbill, Purple Finch and Pine Siskin. All of these are woods birds. Out in the fields we frequently find the Horned and Prairie Horned Larks, Lapland Longspur and Snowflake, in companies. Such species as the Crow, Meadowlark, Mourning Dove, Bob-white and the water birds, are naturally gregarious

within the species, during the winter, but the different species are seldom found together. The birds of prey and Northern Shrike are essentially solitary in habits. Bluebirds and Robins are found as solitary individuals simply because they are so rare as winter birds.

It is clear, then, that to be successful in the winter study of birds one must know something of their favorite feeding places before they can be found at all. In extreme weather they seek protected places, just as you would if compelled to pass all of your time out of doors—indeed, just as you do when you step out of the storm into your home and the comforts of the fireside. I sometimes think that we make too hard work of our bird studies. By inquiring what we should do if we were forced to live the life of the bird, we shall not go far wrong in our interpretation of bird life. Of course we should not reason out what it might be ultimately best to do, but what the first impulse dictates. Birds are the most impulsive creatures living.

Undoubtedly one of the great determining influences upon the local and general distribution of birds, since they are able to travel so easily and so far, is the food supply. Birds are great eaters, because they live so fast. A fever heat temperature requires a large amount of fuel. That is why the birds are feeding all day long in winter. Of course they will go where the food is the most abundant, or where it is obtainable with the least effort. Usually that will be in some sheltered place for the woods birds, but may be an exposed place for the field birds. But since field birds feed upon the ground very largely, they will not be greatly exposed to cold winds there. When such a bird must feed in a strong wind it will invariably turn facing the wind. The other way its plumage would be blown away from its body and so expose it to the full force of the cold. Heading into the wind becomes pretty nearly a necessity in winter.

In the most severe weather, or when the country has become snow-bound for a considerable time, the Crows, Mourning Doves, Meadowlarks and the two forms of Horned Larks,

may be forced into the barnyard for food. Twice the Horned Larks have braved the dangers of civilization and come to the heart of town to glean there. Food they must have, or die.

It may be interesting to give a list of the species which may be found within the limits of Oberlin during some time in the winter, not every winter, perhaps, but during a series of years. The most noticeable one, not to mention that vermin, the English Sparrow, is the Blue Jay. It is on hand in any weather, if you have a kitchen scrap barrel or box. Next is the Downy Woodpecker, closely seconded by the Hairy Woodpecker. Every cold morning one greets me (one of each species) when I am cleaning the walk. Several live on the college campus and in the adjoining trees. Less commonly with them may be seen the Chickadee and White-breasted Nuthatch, usually quiet on cold days, except for that strenuous little chip, while searching for the frozen morsel. Occasionally a Sparrow Hawk or a Northern Shrike come to town, where the sparrows are such easy prey. I have already spoken of the Horned and Prairie Horned Larks coming in during cold, snowy weather. One old Flicker lives in the cupola of Council Hall and forages in the adjoining orchards and back yards. In the neglected back lots Song Sparrows, Tree Sparrows, Juncos and Goldfinches may be found helping some one about next season's gardening. One old Bronzed Grackle and one old Robin refuse to leave the classic village even in the coldest weather. They forage in back yards for a living. A Bluebird pays occasional visits. A Tufted Titmouse or two is sure to pay a call before the close of winter. At least three Screech Owls live about town, known by their wooing all winter long. Once a Mourning Dove and once a Meadowlark ventured into town during December. The Meadowlark rested in a treetop in the midst of the campus. The Red-tailed and Red-shouldered Hawks pass to and fro over town, but I have not counted them. One Horned Grebe was found exhausted on Prospect street in December. Golden-crowned

Kinglets feed in the evergreen trees on the campus and about town all winter. A Brown Creeper has made the college campus his feeding ground this winter. One flock of a dozen Bob-whites ventured well within the settled portion, for no apparent reason, unless their ancestors owned that particular spot by right of long occupation. Crows have frequently passed over within easy range. American Crossbills and Cedar Waxwings are irregular winter residents.

A question that I have often asked myself may occur to others. How is it that the birds pass over the same field, or even small area of weed tops, again and again during the winter, evidently finding something to eat each time? Or, in another way, why don't they clean each weed head up before going to another? One could not watch a company of Tree Sparrows for five minutes without discovering that they merely nip here and there as they pass along, without the intention of making an entire meal at any one place, however abundant the food. There appear to me to be two reasons for this conduct. First, in cold weather they must keep moving or freeze. Second, they want variety. Neither would be true of the flesh-eating birds, both because they are larger and therefore have greater resistance to cold, and because they bolt their food and digest it without grinding. They seldom feed upon frozen food, as the smaller birds must. In the cold weather the smaller birds keep moving all day long, or else seek some sheltered place where a degree of comfort is possible, and all the while they are feeding, now upon this, now upon that sort of food. Even the woodpeckers don't stop to dig long in one place.

If movement is necessary to life in cold weather, how can the birds sleep? Just like any other animal, I suppose. They seek out some sheltered place and curl up. The woodpeckers and other birds which nest in holes in trees sleep there in winter. The sparrows and other birds which build nests in bushes or trees or on the ground, find shelter among the dried foliage of last season, or among the grass on the ground, or even under the snow. Many times have

I startled the Horned Larks and Longspurs from their snow beds, early in the morning. With a little volcano of snow they burst through the slight crust, vaulting into the frosty air, only to dive beneath the snow again, just beyond harm's way. This burrowing habit of the Prairie Chickens is well known to all who hunt. The hawks seek out some dense evergreen, or oak from which the brown, dry leaves have not been torn. The owls do the same, or crawl into a hollow trunk.

Why don't birds' feet freeze, I have often been asked. They do, sometimes. There isn't much about them to freeze but skin and tendons. The skin is a horny sort of skin, and the tendons are tough. Such material does not freeze readily. When the birds squat, as they do when perched, the feathers form a warm blanket for the feet and legs. A hungry bird, I mean one which has fasted long, is an easy prey for the frost. A bird's vitality is much more quickly sapped by fasting than ours is, as they are faster livers than we are. But for their covering of feathers, the warmest possible garment for its weight, none could hope to survive the rigors of our northern winters.

I have spoken of the few Bluebirds which remain with us all winter. Ten years ago no Bluebirds were ever seen in winter in the county. During that phenomenal winter of 1894-95, when the South was swept by such a cold wave that the orange trees in Florida were destroyed, and Tennessee suffered one of the severest weeks since the Civil War, the Bluebirds which had gone into that warmer region to winter, were all but exterminated. They had wintered in that comparatively warm region for so many generations that when the severe cold did come they were unable to withstand it. But the comparatively few individuals which tarried in southern Ohio were able to live through even severer weather, and it is the descendants of that hardier race which find northern Ohio bearable now.

What do the birds eat when everything is covered with snow and ice? That depends upon the bird. The large

flesh-eating birds must have flesh, and the grain-eating birds, including the sparrows and Bob-white, and the Ruffed Grouse, of course, live on vegetable matter. It is hardly going beyond the facts to say that the smaller insect-eating birds will take anything that can be found. The woodpeckers eat large proportions of seeds and other vegetable matter, in winter, and so do the nuthatches, and tit-mice. The Brown Creeper may not eat vegetable matter. Crows and jays eat anything. In the severest weather, when the north of Ohio is covered with snow but the southern part is free from it, or nearly so, as sometimes happens, the birds of prey go to the less snowy regions and remain until there is a change, food being easier to obtain under such conditions.

If there is one lesson which the study of birds in winter teaches more than another, it is that there can be no hard and fast line drawn in respect to what birds will eat when their ordinary food is hard to get or wholly wanting. Birds that are supposed to subsist wholly upon insects or similar food, will take large proportions of vegetable food in winter. The soft inner bark of many trees furnishes a never failing supply of food for some of the woodpeckers at least. One needs to think but a moment to perceive that one of the essentials of a bird whose residence is in a northern region for the whole year, is the ability to adapt itself to the conditions, which are certain to be variable. Winter bird life is but one of the chapters in the story of the development of the intensely interesting class—Birds.

A PRELIMINARY LIST OF THE BIRDS OF YAKIMA COUNTY, WASHINGTON.

BY WM. LEON DAWSON.

Yakima county, in south-central Washington, attracts attention as containing one of the most fertile and salubrious sections in the entire state. The county measures, approximately, fifty by one hundred and twenty miles, but the cultivated land lies almost exclusively along the Yakima river and in those tributary valleys which center in or near the city of North Yakima. The eastern and south eastern portion, or greater half of the county, consists of arid and treeless plains interrupted by frequent low mountain ranges of Columbian lava. The western third is increasingly mountainous and correspondingly timbered, including, as it does, Mt. Adams, and the eastern approaches of Mt. Rainier.

As we should expect, therefore, the larger portion of the county presents a fauna which is strictly Upper Sonoran; but from there westward a transition is made to the Boreal fauna; and in the extreme west a junction must be in some way effected with the saturated forms of Puget Sound.

Our interest, however, centers in a typical valley in the most favored agricultural region, the middle-northern. The Ahtanum valley stretches westward from North Yakima between barren hills for a distance of some twenty miles. At this point the stream forks. Its barriers rise to the dignity of mountains. Evergreen timber begins and increases in density until we are lost in the depths of the higher ranges. The valley proper is abundantly watered, both naturally and artificially. The characteristic covers for birds are, therefore, furnished by willow and rose thickets, bounding the tiny, sub-divided streams; high, open groves, or "timber cultures" containing poplars and quaking asps; occasional swamps, or "slews;" and by the universal setting of sage-brush.

Amid these surroundings, and at a point about eight miles up the valley, the writer lived three years—'85-87, and

'99-'00—and spent parts of four spring seasons beside. It was during the latest residence of a year, '99-'00, that the best opportunities for observation were afforded. It was here upon our "Five Acres of Bird-land," reported in THE WILSON BULLETIN, No. 32, that I recorded 63 species of birds in the nine months of a year, exclusive of spring. This little spot, with its singularly varied topography, is referred to in the following notes, for lack of a more comprehensive name, as "the demesne." From here, also, I was enabled to make frequent trips and sallies, sometimes to the "South Range" of hills, sometimes to the timbered mountains, and once to the narrow paradise of the Lower Yakima.

On the whole, birds are not abundant in the Yakima country, either in number of species or individuals. The best strictly local horizon for a day comprised only 35 species; while the best county horizon, taken on a trip from Ah-tanum to the Yakima Soda Springs, included but 50 species. The migrations are not very conspicuous. The resident birds slip into their places rather quietly; while birds known to be common further north are seldom seen as they move to and fro.

Of especial note, however, are the changes which have taken place in the status of different species. A period of observation covering roughly fifteen years has witnessed many important modifications in the distribution of birds. Decrease has been apparent in the hawks and owls, except the Burrowing Owl, and in the game birds, such as ducks, geese, grouse and curlews. But this has been offset by a most gratifying and unmistakable increase among the Passerine birds, and those which can in any way profit by civilization. Among this number may be cited the Arkansas Kingbird, Say's Pewee, Bullock's Oriole, Rusty Song Sparrow, Lazuli Bunting, Robin and others. It would seem probable that certain species, as Cowbird and Cliff Swallow, have invaded the region solely because of the advent of man.

The following list is to be understood as strictly prelimi-

nary, a working basis for future investigation, and necessarily incomplete as yet because of the immense territory to be covered:

1. *Sterna hirundo*. Common Tern.—A solitary bird was seen at Union Gap August 19, 1899.

2. *Merganser serrator*. Red-breasted Merganser.—Some sixteen years ago I caught a bird asleep beside a pool of the Ahtanum creek.

3. *Lophodytes cucullatus*. Hooded Merganser.—One shot on Minner's pond. Others reported.

4. *Anas boschas*. Mallard. The common duck.—Breeds.

5. *Nettion carolinensis*. Green-winged Teal.—Fairly common.

6. *Querquedula cyanoptera*. Cinnamon Teal.—Two records.

7. *Erismatura jamaicensis*. Ruddy Duck.—One record, Minner's pond, October 26, 1899.

8. *Branta canadensis occidentalis*. White-cheeked Goose.—The common goose. Breeds sparingly.

9. *Ardea herodias*. Great Blue Heron.—Not common.

10. *Grus mexicana*. Sandhill Crane.—Not common except during migrations. A single bird was once observed wading in a shallow of the Yakima river. The bird behaved as awkwardly as a sore-footed Tommy Atkins, and once he actually fell into the water.

11. *Rallus virginianus*. Virginia Rail.—This bird and the next are to be found in any considerable tule swamp.

12. *Porzana carolina*. Sora.

13. *Gallinago delicata*. Wilson's Snipe.—Common. Resident.

14. *Tringa baridii*. Baird's Sandpiper.—An extensive tour of the country during the month of August developed the presence of multitudes of these birds. Singly or in small groups they frequent every wayside plash and overflowing irrigating ditch.

15. *Tringa minutilla*. Least Sandpiper.—A single flock once swept over the demesne, piping loudly.

16. *Totanus melanoleucus*. Greater Yellow-legs.—By the side of a farm-yard pond I once watched a bird which seemed rather to enjoy company so long as you didn't actually step on him. With immaculate under-garments rolled tightly above each knee, he would adventure to wade around you rather than to fly out of your way.

17. *Actitis macularia*. Spotted Sandpiper.—Regular but not common.

18. *Numenius longirostris*. Long-billed Curlew.—Not uncommon. Breeds.

19. *Aegialitis vocifera*. Killdeer.—Common.

20. *Canachites franklinii*. Franklin's Grouse.—The "Blue Grouse" is the common bird of the lower mountain ranges.

21. *Bonasa umbellus togata*. Canadian Ruffed Grouse.—Of re-

stricted range. Found commonly in the bottom of valleys in the lower slopes.

22. *Pedioecetes phasianellus columbianus*. Columbian Sharp-tailed Grouse.—The local "Prairie Chicken" was once abundant, but is falling off in numbers every year. Where they are able to hold their own at all, it is in the oldest settled parts where food is plentiful and some protection afforded.

23. *Centrocercus urophasianus*. Sage Grouse.—Sixteen years ago a neighbor boy showed me a nest of Sage Hen's eggs from which I was allowed to abstract "just one." The remainder were destined in due season for a domestic career. The parent bird returned within an hour, and, smelling the odor of humans, ruthlessly destroyed the tainted eggs. It served us jolly well right, too: those eggs should have been appropriated in the name of science—neighbor to the contrary notwithstanding. Hold! I forget! He was bigger than I. The Sage Grouse of the Yakima is rapidly nearing extinction. I saw only one small flock during my last year's residence.

24. *Zenaidura macroura*. Mourning Dove.—Abundant.

25. *Cathartes aura*. Turkey Vulture.—Not uncommon. Nests in caves and crevices of the Natchez cliffs and elsewhere.

26. *Circus hudsonius*. Marsh Hawk.—Perhaps the commonest hawk twenty years ago. The rustic has waged a witless warfare against it, and is reaping a well deserved harvest of "ground squirrels" in consequence.

27. *Accipiter velox*. Sharp-shinned Hawk.—Not uncommon.

28. *Buteo borealis calurus*. Western Red-tail.—The species was unknown to me during my earlier residence, but I saw one bird on the Lower Yakima in the summer of '99.

29. *Buteo swainsonii*. Swainson's Hawk.—All the Buteos are rare here in Yakima, but this is probably the commonest one.

30. *Archibuteo lagopus sancti-johannis*. American Rough-legged Hawk.—Three individuals clearly distinguished April 3, 1900.

31. *Archibuteo ferrugineus*. Ferruginous Rough-leg.—No considerable walk or ride over the barren foot-hills is complete without a glimpse of these majestic birds.

32. *Haliaeetus leucocephalus*. Bald Eagle.—I have a record of a solitary eagle guarding his nest on the Yakima river, near Snipe's mountain. Also a "yard record" for March 5, 1900. The bird was, of course, flying overhead.

33. *Falco mexicanus*. Prairie Falcon.—Not uncommon when once the eyes have been opened, but it is a bird of which *vulgus homo* knows nothing. It is to be seen most frequently about the summits of the untimbered ranges.

34. *Falco peregrinus anatum*. Duck Hawk.—While riding along at the head of a funeral procession, where I didn't care to crane my neck too curiously, I saw a Peregrine Falcon make a wanton swoop of a hundred yards or so and then go mincing off like a

skittish horse at sight of the unwonted spectacle. There is only one Peregrine.

35. *Falco columbarius*. Pigeon Hawk.—Several clear records, including one yard record, September 18, 1899.

36. *Falco sparverius deserticolus*. Desert Sparrow Hawk.—Of five hawks in sight at once four are bound to be Sparrows.

37. *Asio wilsonianus*. American Long-eared Owl.—Common. Nests.

38. *Asio accipitrinus*. Short-eared Owl.—One record of several seen in the lower Moxee swamp.

39. *Megascops asio macfarlanei*. MacFarlane's Screech Owl.—Quite rare. Two yard records.

40. *Bubo virginianus arcticus*. Arctic Horned Owl.—Fairly common fifteen years ago. None seen in '99-'00.

41. *Speotyto cunicularia hypogaea*. Burrowing Owl.—Abundant, and manifestly increasing. It is well, since farmers will kill hawks indiscriminately.

42. *Glaucidium gnoma californicum*. California Pygmy Owl.—One specimen shot during the winter of '86-'7, the only one ever seen.

43. *Ceryle alcyon*. Belted Kingfisher. Common.

44. *Dryobates pubescens gairdnerii*. Gairdner's Woodpecker.—Yard record and others. Not common.

45. *Xenopicus albolarvatus*. White-headed Woodpecker.—Not rare in the mountains.

46. *Sphyrapicus thyroideus*. Williamson's Sapsucker.—The county record was made August 9, 1899, when a female was closely studied at the Yakima Soda Springs.

47. *Melanerpes torquatus*. Lewis's Woodpecker.—The Black Woodpecker was rare a dozen years ago except along the upper reaches of the Yakima river. Its fondness for fruit has, however, given it a general distribution of late, and a notable increase in numbers.

48. *Colaptes cafer*. Red-shafted Flicker.—Owing to the scarcity of timber this bird has taken to public and vacant buildings, especially school houses, and because of his destructiveness to the woodwork a price is often put upon his head.

49. *Phalaenoptilus nuttallii*. Poor-will.—Among the sweetest memories of boyhood is the plaintive whistling of this bird along about milking time. A few still linger, but it does not take kindly to the ways of civilization.

50. *Chordeiles virginianus henryi*. Western Nighthawk.—Common. In the lower Ahtanum valley I have seen upwards of 200 of them gyrating, swallow fashion, within the limits of a single pasture.

51. *Chaetura vauxii*. Vaux's Swift.—Two seen in a mountain valley, the north fork of the Ahtanum.

52. *Stellula calliope*. Calliope Hummer.—A dubious identification

of a couple of birds seen in the demesne. Humming-birds are very rare in the Yakima country.

53. *Tyrannus tyrannus*. Kingbird.—Not common. A quiet bird beside his garrulous cousin.

54. *Tyrannus verticalis*. Arkansas kingbird.—Common. On the increase.

55. *Sayornis saya*. Say's Phoebe.—I did not make the acquaintance of this bird during my first residence of two years, '86-'87. The first bird was seen in a Tampico barn in the spring of 1891. Since then it has increased rapidly, until it is now the presiding genius of every hop-house (dryer) and barn. A typical spring record is February 20, 1900.

56. *Contopus richardsonii*. Western Wood Pewee.—Not very common. A bird of marked local attachments, and probably on the increase.

57. *Empidonax hammondi*. Hammond's Flycatcher.—If one may believe anything at all about these very difficult "gnat-kings," Hammond's is the common bird and the noisiest of the lot. In the "spring" migration of 1899 he arrived on June 14, and very presently set up housekeeping. I found his nest on the 27th. On July 4th it contained one egg, and on July 10th still only two, which I took. The eggs in this case were not white but creamy, with scattered spots of reddish-brown, much like a Western Wood Pewee's. Weary! weary! but those Empidonaces are a most ungetatable lot, the trickiest sprites in nature.

58. *Otocoris alpestris leucolaema*. Pallid Horned Lark.—The winter birds, which are not common, are believed to belong to this sub-species.

59. *Otocoris alpestris merrilli*. Dusky Horned Lark.—Common; especially so on the summits of the treeless ranges, where it breeds freely.

60. *Pica pica hudsonica*. American Magpie.—The most badly wanted bird of the Yakima. Incessant persecutions have only produced additional convolutions in the cerebral hemispheres of Magpie's brain, and the bird still has a fighting chance for life. In my little day I have semi-officially inspected something over a hundred fortifications which this bird was pleased to erect for the defense of his children.

61. *Cyanocitta stelleri annectens*. Black-headed Jay.—Common in the evergreen timber. Rare below.

62. *Corvus americanus*. American Crow.—An old residenter with many strange habits, but no "characters" differing from the eastern bird.

63. *Nucifraga columbiana*. Clarke's Nutcracker.—Not rare in heavy timber.

64. *Molothrus ater*. Cowbird.—Unknown till recently.

65. *Agelaius phoeniceus*. Red-winged Blackbird.—Fairly common.

66. *Sturnella magna neglecta*. Western Meadow Lark.—Common.

The bird with the merry heart which maketh a glad countenance.

67. *Icterus bullocki*. Bullock's Oriole.—Common. Increasing.
68. *Scolecophagus cyanocephalus*. Brewer's Blackbird.—One of the autochthones. Omnipresent and not justly complained of.
69. *Loxia curvirostra minor*. American Crossbill.—Resident in mountains.
70. *Loxia leucoptera*. White-winged Crossbill.—One record, May 15, 1891.
71. *Acanthis linaria*. Redpoll.—Swarms in winter.
72. *Astragalinus tristis*. American Goldfinch.—Fairly common.
73. *Spinus pinus*. Pine Siskin.—Noted during my last year's residence throughout the year, except in winter. Where and when they breed is the mystery, since they are back by the middle of March and appear in care-free troops the rest of the time.
74. *Passerina nivalis*. Snowflake.—Unmistakably heard once, November 4, 1899.
75. *Poocetes gramineus confinis*. Western Vesper Sparrow.—Fairly common.
76. *Chondestes grammacus strigatus*. Western Lark Sparrow.—Not very common. Perhaps increasing.
77. *Zonotrichia leucophrys gambellii*. Intermediate Sparrow.—Swarms through the country during migration, and probably remains sparingly to breed.
78. *Spizella monticola ochracea*. Western Tree Sparrow.—Once recorded a flock of 25, on February 17, 1900, in the Ahtanum valley.
79. *Spizella socialis arizonae*. Western Chipping Sparrow.—Universally but sparingly distributed up to and a little beyond pine timber.
80. *Spizella breweri*. Brewer's Sparrow.—The sage wastes in spring and summer fairly teem with these sprightly and tuneful sparrows. Under their zealous ministrations the desert is transformed into a passable paradise of song.
81. *Junco hyemalis connectens*. Shufeldt's Junco.—Relying upon the example of Mr. Rathbun ("The Auk," April, 1902, p. 137), I set down the breeding bird of the timbered mountains as *J. h. connectens*. The winter birds of the lower valleys belong probably to the next sub-species.
82. *Junco hyemalis oregonus*. Oregon Junco.—Common in winter.
83. *Amphispiza belli nevadensis*. Sage Sparrow.—Noted only during the spring of 1895, when one specimen, a singing male, was taken from a group of resident birds.
84. *Melospiza melodia morphna*. Rusty Song Sparrow.—Common resident. The Yakima Song Sparrow may prove to have closer affinities with *M. m. merrilli*, or even to deserve separate elaboration.
85. *Pipilo maculatus megalonyx*. Spurred Towhee.—Common. The Towhee of eastern Washington will fall an easy victim to the first species hunter with a gun.

86. *Zamelodia melanocephala*. Black-headed Grosbeak.—Not common. Yard record.

87. *Cyanospiza amoena*. Lazuli Bunting.—A common and delightful songster.

88. *Piranga ludoviciana*. Louisiana Tanager.—Fairly common, especially in pine timber.

89. *Petrochelidon lunifrons*. Cliff Swallow.—Time was when the only Cliff Swallows known to the county were to be found about the old school house at Yakima City. Since then they have become widely but not universally distributed.

90. *Hirundo erythrogaster*. Barn Swallow.—A familiar but not abundant breeding bird.

91. *Tachycineta bicolor*. Tree Swallow.—Not common.

92. *Tachycineta thalassina*. Violet-green Swallow.—Found only, as yet, in the mountains and about the wilder basaltic cliffs. They throng the narrow gorge of the Upper Yakima.

93. *Clivicola riparia*. Bank Swallow.—Common.

94. *Ampelis cedrorum*. Cedar Waxwing.—An invariable accompaniment of Yakima cherries, in season.

95. *Lanius borealis*. Northern Shrike.—Common in winter.

96. *Lanius ludovicianus excubitorides*. White-rumped Shrike.—Rather rare. Breeds.

97. *Vireo gilvus*. Warbling Vireo.—Fairly common.

98. *Vireo flavifrons*. Yellow-throated Vireo.—An unmistakable member of this species was narrowly scrutinized in a quaking asp grove of the middle Ahtanum, May 12, 1895.

99. *Vireo solitarius cassinii*. Cassin's Vireo.—A characteristic bird of groves and timber cultures.

100. *Helminthophila celata lutescens*. Lutescent Warbler.—Common summer resident.

101. *Dendroica aestiva*. Yellow Warbler.—Abundant.

102. *Dendroica coronata*. Myrtle Warbler.—One record, April 30, 1891.

103. *Dendroica auduboni*. Audubon's Warbler.—Abundant during migrations; probably breeds in the mountains. The *avant courier* for 1900 appeared March 11th. The bulk of the species passed through a month later.

104. *Dendroica townsendi*. Townsend's Warbler.—A late migrant. They thronged my trees on June 5, 1899. One returned, still singing, on August 23rd.

105. *Geothlypis tolmiei*. Macgillivray's Warbler.—A familiar inhabitant of brushy tangles.

106. *Geothlypis trichas occidentalis*. Western Yellow-throat.—Common.

107. *Icteria virens longicauda*. Long-tailed Chat.—A brilliant and much cherished performer. Happy is the grove that boasts a pair of these wariest of singers.

108. *Wilsonia pusilla pileolata*. Pileolated Warbler.—Common during migrations. I have not yet found it breeding.

109. *Anthus pensilvanicus*. American Pipit.—Abundant during migrations.

110. *Cinclus mexicanus*. American Dipper.—Found sparingly on the larger and wilder streams.

111. *Oroscoptes montanus*. Sage Thrasher.—The peerless singer of the open sage. His kingdom is being taken away from him, but his laurels none can destroy.

112. *Salpinctes obsoletus*. Rock Wren.—Found occasionally on the lava ranges.

113. *Troglodytes aedon aztecus*. Western House Wren.—One record, May 13, 1895.

114. *Cistothorus palustris paludicola*. Tule Wren.—Several seen in lower Moxee swamp.

115. *Sitta canadensis*. Red-breasted Nuthatch.—Not uncommon during migrations. Doubtless breeds in the mountains.

116. *Parus atricapillus occidentalis*. Oregon Chickadee.—Common resident.

117. *Parus gambeli*. Mountain Chickadee.—One record, May 15, 1891. Probably not uncommon in pine timber.

118. *Regulus satrapa olivaceus*. Western Golden crowned Kinglet.—Winter resident in lower valleys. Probably breeds in mountains.

119. *Regulus calendula*. Ruby-crowned Kinglet.—Found only during migrations.

120. *Hylocichla ustulatus*. Russet-backed Thrush.—An omnipresent bird of river-side, thicket and grove.

121. *Merula migratoria propinqua*. Western Robin.—Common.

122. *Sialia mexicana occidentalis*. Western Bluebird.—Only once seen in the Ahtanum valley, October 23, 1899.

123. *Sialia arctica*. Mountain Bluebird.—Breeds sparingly in the mountains and is only occasionally seen in the lower valleys.

To this may very properly be appended a brief list of those birds of which no record has been made, but which may be regarded as morally certain to occur within the limits of the county. The list is purposely moderate:

Western Grebe.	Pileated Woodpecker.
Holboell's Grebe.	Oregon Jay.
Loon.	Cassin's Purple Finch.
American Golden-eye.	Rough-winged Swallow.
Buffedhead.	Calaveras Warbler.
Hutchin's Goose.	Hermit Warbler.
American Coot.	Western Winter Wren.
Sooty Grouse.	California Creeper.
Golden Eagle.	Slender-billed Nuthatch.
Red-breasted Sapsucker.	Pygmy Nuthatch.

INCUBATION PERIOD OF THE MOCKING BIRD.

BY JOHN W. DANIELS, JR.

Little has appeared concerning the exact time required by various species of birds for the incubation of their eggs. The period of time necessary for the development of the egg contents, from the fresh state to the hatching point, must needs vary with species and be subject to the many diversified conditions under which birds breed. Features of climate, as sunshine, atmospheric humidity, precipitation and temperature enter, along with locality, time of year, nesting site, nesting material, and nesting habits in general, as potent factors of control. In order to determine the period of incubation of any species the closest observation is necessary, and the observer should visit the nest daily, from the time of the laying of the first egg until the young leave the nest; and better still, if his observations commence with the laying of the foundation of the nest and are carried on until the young are able to fly. Exact data, as to the time necessary for the incubation of the eggs of even our commonest birds, is very meager—so here is a little-worked and profitable field for research; and as the securing of this information involves no destruction of bird life, it may be had without sacrifice of any sort save that of time and patience.

The following data regarding the period of incubation of the Mocking Bird (*Mimus polyglottos*) was secured in Campbell county, Virginia, April 29th to June 3rd, 1901, inclusive. Upon the former date the half-completed nest was found, and upon the latter date the young were seen to leave the nest. The nest was five feet up among the lower branches of a Norway spruce, which grew within twelve feet of the veranda of our home, in our front yard. Thus, the nest could not have been more favorably located for my purposes of observation, as its nearness to my home allowed me to visit it daily, regardless of weather, and at short intervals:

April 29. Found the half-completed nest.

May 3. Examined the nest and found it completed, apparently ready for eggs.

May 4. Nest still empty.

May 5. First egg laid.

May 6, 7 and 8. An egg followed each morning for three days. Parent bird started incubating with egg No. 1, and was on nest constantly thenceforth. Visited nest early and often each morning with a view to getting data as to time of laying of each egg. It was not possible to find out the precise time, but an approximate schedule was made as follows.

Egg No. 1, deposited 8:30 A. M.

“ “ 2, “ 9:00 “

“ “ 3, “ 8:00 “

“ “ 4, “ 8:45 “

May 9, 10 and 11. Visited nest. Both parents present, one on nest and other in adjoining shrub.

May 12. Examined nest and was sorry to note that one egg had disappeared—no doubt the work of a jay or crow. Parents around, though seeming shy.

May 13. Visited nest. Both birds present, one on nest. Both very demonstrative.

May 14. Visited nest. Parent bird incubating, as usual.

May 15. Much to my regret I found another egg missing from the nest this morning. Both birds around, apparently much distressed. Would like to catch the thief.

May 16. Visited nest and was glad to find bird sitting upon the two remaining eggs.

May 17. Visited nest. Parent flew from it. Both present. They scolded, and one fluttered so close as to almost touch me.

May 18. Visited nest. Parent flew from it upon my approach. One bird seems to stay on guard on the topmost branch of a nearby shrub while the other bird incubates. On nearly every visit this has been the case. The bird on guard utters a wheezing sort of note on my approach, which seems to warn the sitting bird, as she at once leaves the nest.

May 19. Visited nest. Both birds present, scolding vigorously; are becoming accustomed to me, as they approach nearer.

May 20. Visited nest. One bird on guard on topmost branch of a nearby tree, as usual. Both birds very noisy and approached quite near to me when I examined nest.

May 21. Visited nest. Both birds around as usual; bolder than ever; very demonstrative. Both alighted in branches of the spruce a few feet above my head.

May 22. Visited nest. Birds around as usual.

May 23. Visited nest. Lo! the two eggs have disappeared and two young now occupy the nest. Both old birds still bolder, approaching within a few feet of me when I go near the nest. Young have not opened their eyes yet, and are entirely naked, save for a few patches of down.

May 24. Visited nest. Both birds constantly scolded and fluttered at me. Young have not changed appreciably; their eyes are still closed.

May 25. When I approached the nest the parent birds became bolder than ever. They have now become accustomed to me and take liberties. One struck the brim of my hat with its wings, first hovering just above my head and then descending with quick a movement. Young have not opened their eyes but seem lively, and open their mouths for food when I touch the nest. Not changed much in appearance.

May 26. Visited nest. Young slightly larger; points of primaries appearing; eyes open; mouths open at slightest movement near nest; old birds demonstrative as usual.

May 27. Visited nest. Rainy day. Parent bird sitting on young; young larger and feathered tracts further developed since yesterday.

May 28. Visited nest. Young appreciably larger since yesterday. Primaries and secondaries now good sized "pin" feathers. Feathers of dorsal area fairly well developed. White, fluffy feathers on sides of breast and flanks of considerable length. Less down.

May 30. Visited nest. Further development of young

since yesterday noticeable. Feathers show still more distinctly; less down. Young more vivacious, chirping when I took them out of the nest to examine them. Both parents present.

May 31. Visited nest. Young further developed since yesterday. The remiges have broken out of the follicles. Only slight trace of down remaining. This is confined to the crown and to the dorsal area. Feathers of ventral tract fluffy in appearance and well developed.

June 1. Visited nest. Young further matured; well feathered; very slight trace of down; parents present. Young fed at intervals of five or ten minutes.

June 2. Nest visited, but the young have vacated it. A search of the neighborhood revealed them among the high grass some 150 yards distant. They are able to fly a few feet at a time. Parents continue to feed them.

To summarize, the following positively established results are apparent: Length of incubation (dating from the laying of the last egg of the set), thirteen (13) days; young in nest, after hatching, ten (10) days.

A BIRD NEW FOR OHIO.

BY LYNDIS JONES.

Mr. Irving A. Field, a student in Dennison University, Granville, Ohio, reports the capture of a European Widgeon (*Mareca penelope*) on the Licking Reservoir, March 29, 1902, by Mr. Peter Hayden, of Columbus, Ohio. The specimen was given to Mr. Field, and is now in the collection of Dennison University. The frequent occurrence of this Old World form in the eastern part of this country makes it a possible visitor to any of our inland lakes. This record for central Ohio fills a considerable gap in its inland distribution.

THE WILSON BULLETIN.

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Edited by **LYNDS JONES.**

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EDITORIAL.

The editor received a very pleasant call from our fellow-member, Benj. T. Gault, of Glen Ellyn, Ill., on May 7th. His arrival was just in time for the annual "All Day with the Birds," in company with Rev. W. L. Dawson, and the reader can imagine how the day was spent when three such bird lovers were together. In the next number of THE BULLETIN there will be an account of the day's doings.

The northern Ohio warbler migrations have been unprecedented in the numbers of individuals which have visited the region, and in the length of the visits paid by each. There can be no doubt that the weather was the chief factor in this visitation. The last days of April were not favorable to much movement, but the first eight days of May proved almost everything desired for the moving birds. Just when the warbler wave was at its height the north gave us cold, wet weather, with northerly winds, which continued until the 17th almost without a shade of relief. Nothing seemed to dare the northward journey during these days. Their numbers may be guessed from the record of 22 species on May 7th.

We believe that many persons would be interested both in our organization and in our BULLETIN if their attention were called to them. The editor will be glad to furnish sample copies of the BULLETIN and send printed matter to all whose names and addresses may reach him. We should have a hundred active members, at least, and an unlimited number of associate members, representative of the whole country, in order to do the work which we want to do. A personal campaign in the interest of the Chapter and BULLETIN by every present member would result in great benefit to all in the matter of increased facility for good work, and in the possibility for improvements in the BULLETIN. Shall we not all work to this end?

The editor has enjoyed two very pleasant vacations for the sole purpose of studying the birds. The first one was a day with Mr. Benj. T. Gault, of Glen Ellyn, Ill., and Rev. W. L. Dawson, of Columbus, Ohio, on an "All Day With the Birds" in Lorain county, Ohio, being the fourth of its kind for this wonderfully favored region ornithologically. The second vacation was of more significance, being one of a series of studies planned for the purpose of determining what are the resident birds of some of the more interesting and relatively little known places in Ohio, in preparation of a revised catalogue of Ohio birds which is being prepared under the direction of the Ohio State Academy of Sciences. The work occupied three days at the Licking Reservoir, some 30 miles east of Columbus, Ohio. There were in this company Mr. Irving A. Field, a student of Dennison University, Granville; Mr. E. J. Arrick, of McConnellsville; Rev. W. L. Dawson, of Columbus, and the editor. The region is a rich one, and the work deserves special mention in a later number.

Returns from the request for notes upon the migrations for March were too meagre to permit of a report. If such a report is to be of any value it must comprise representative localities not farther apart north and south than every degree of latitude, and east and west both in the regular streams of migration and between such places. It is not enough to know the rate at which birds travel along their regular highways. We know that pretty well already in general. If the migrations away from those highways are only a spreading from them as a center, or if they are the result of an independent movement, we want to know it. The past spring has been unusually favorable for recording unusual warblers, and for studying the warbler host in general. There can be little doubt that the favorable conditions were caused by the weather rather than by any unusual numbers of the different species. This assumption could be verified or disproved if reports from many different places in Ohio and the adjoining states and Ontario were available for comparison. Studies so strictly local are of far less value standing by themselves than if taken with a large number of other local studies for adjoining regions. Can we not combine our efforts to learn more about the migrations by sending such records as we have to some one who can study them for a final report? The editor has volunteered his services, but he would be glad to turn the work over to another if any one will volunteer to do it. Is there such an one?

ELECTION OF NEW MEMBERS.

The following applications for active membership were received before the April election, but after the last BULLETIN was mailed. If there be no objection these persons may be considered as received into active membership:

W. E. Saunders, 352 Clarence street, London, Ontario.

Wm. J. Mills, Box 16, East Point, Ga.

Miss Adelaide Utter, Clerk U. S. Circuit Court, Kansas City, Mo.

Mrs. Olive Thorne Miller, 827 DeKalb avenue, Brooklyn, N. Y.

Miss Rebecca Leete, North East, Pa.

Clarence Morrison Brooks, 105 West street, Keene, N. H.

The following persons make application for associate membership:

Jane L. Spencer, 239 East First street, Oswego, N. Y.

Harry B. McConnell, Cadiz, Ohio.

Mrs. C. J. Hunt, Harris Cottage, Lakewood, N. J.

Irving A. Field, Box 510, Granville, Ohio.

Charles E. Slocum, M D., Defiance, Ohio.

NOTES.

BOULDER, COLORADO, BIRDS INCREASING.—Owing to various causes, birds are noticeably increasing in numbers at Boulder. This is especially true of the Mountain Bluebird (*Sialia arctica*) and the Western Robin (*Merula migratoria propinqua*). It is not uncommon to see 100 robins at a time in the orchard covering half a block of ground, at the rear of my home, in the early morning. It seems to me, as others have often noticed, that the House Finch (*Carpodacus mexicanus frontalis*) is becoming more numerous each year; and this year I have seen more Juncoes of various species than usual. It must be regretfully added that the most disliked European importation, *Passer domesticus*, has reached Boulder during the past few years and is rapidly spreading its numbers over the city.—JUNIOUS HENDERSON.

LAKEWOOD, N. J., April 18, 1902.—Clear. Wind west. 52°. 9 to 12 A. M. In a meadow back of the farm a pair of Bluebirds were gathering nesting material and loving each other. They flew straight to a tree which had a large shallow hole and entered it. When they flew away I examined the tree and found a beautiful nest almost finished. Further on a Tufted Titmouse responded to my whistled call. In an apple orchard Goldfinches were singing loudly, with Robins and Chipping Sparrows. A mile beyond, in the cemetery, a pair of Robins were building a nest in a pine tree, and a pair of Pine Warblers were building on a projecting pine branch. The nest was about fifteen feet from the ground, on the very tip end of the branch. I watched a long while with field glass while both birds brought feathers and soft wisps of dead grass. The nest was deep, cup-shaped and as large as a breakfast cup, very soft and downy looking, with many white feathers.

Still another mile along the Freehold road, to the farm on the hill, and away from the road to the right, down to the foot of the hill, I went through the swamp where the farmer had cut off all the wood and brush, leaving the beautiful moss and arbutus and the pitcher plants to die from exposure to sun and heat. Field and Song Sparrows were there, and I flushed three large, fat Ruffed Grouse which went off with a noise of low thunder. Suddenly came the loud clear whistle of a bird that I knew well, but heard for the first time this spring. I whistled in answer and he soon came where I could see him, for he is a very inquisitive little fellow. Sure enough, it was the Carolina Wren. No mistaking that erect tail and the quick, nervous body as he peers at the impudent intruder of his wooded retreat. But he doesn't linger long for you to observe him, but darts away with another burst of joyous song selected at random from his great variety, rich and melodious. He is a difficult bird to see near enough to study the markings, but he responds readily to the whistled call, and may sometimes be induced to remain quiet long enough to make a good study. While I was trying to coax him back again a rapid drumming on a tree behind me made me turn in that direction to discover a big, red-headed woodpecker. On going nearer it proved to be a Yellow-bellied Sapsucker busy on a thrifty tree extracting sap. Over the treetops sailed a Sharp-shinned Hawk. I got a good view of him before he sailed higher and higher in small circles into the sky.—NELLIE H. HUNT.

PUBLICATIONS RECEIVED.

BIRDS OF OREGON, ANNOTATED LIST OF THE. By A. R. Woodcock. Bulletin No. 68 of the Oregon Agricultural Experiment Station. January, 1902. Corvallis, Oregon.

This annotated list of 333 species of Oregon birds was compiled by Mr. Woodcock for the degree of Master of Science, under the direction of the professor in charge. A frontispiece of "The Denny Pheasant," two pages of Introduction by the professor in charge, and a page of acknowledgments by the author, are followed by the list of species which are more or less annotated. We are forced to the conclusion that the author has made little use of the editorial blue pencil both in the compilation of the list of species and in the selection of annotations. It is not easy to throw out records which may be questionable without giving offense, unless there be a definite statement as to what shall constitute an accepted record. For any species about which there could be a question, it is fair to require the evidence of a specimen to prove the validity of the species as belonging to the state fauna. Anything less than this is likely to lead to error. Hypothetical lists are always convenient for questionable records.

It may not seem quite fair to expect everybody to keep in touch with our rapidly shifting nomenclature, but we cannot help suggesting that a list dated 1902 might well contain the revisions of the check-list made a year before the list appeared.

We trust that this list is preliminary to a more carefully prepared one soon to follow.—L. J.

THE MISSION OF THE BIRDS. By Clarence Moores Weed. Nature Study Leaflet No. 2, New Hampshire College Agricultural Experiment Station. April, 1902.

This 12-page illustrated leaflet is pretty clearly intended for the teacher of children, and is therefore full of directions for the instruction of the children in nature study, but particularly the study of birds. This text is largely explanatory of a diagram on the second page which sets forth graphically, on a plan of grouping, the insects which molest all sorts of vegetation under all sorts of conditions, and the birds which feed upon the insects. This chart is well conceived and clearly done, and, with the accompanying text and illustrations, makes a distinct contribution to the pedagogical side of Ornithology.—L. J.

List of Generic Terms Proposed for Birds During the Years 1890 to 1900, Inclusive, to which are Added Names Omitted by Waterhouse in his "Index Generum Avium." By Charles W. Richmond. From the Proceedings of the U. S. National Museum, Vol. XXIV., pages 663-729.

Amateur Sportsman, The, Vol. XXVI., Nos. 5 and 6, Vol. XXVII., Nos. 1 and 2.

American Monthly Microscopical Journal, The, Vol. XXIII., Nos. 3 and 4.

American Ornithology, Vol. II., Nos. 3 and 4.

Bird-Lore, Vol. IV., Nos. 2 and 3.

Birds and Nature, Vol. XI., Nos. 3 and 4.

Bulletins 130, 131, 132, 133, Ohio Agricultural Experiment Station, 1902.

Bulletins 58, 59, The Pennsylvania State College Agricultural Experiment Station, March, 1902.

By the Wayside, Vol. V., No. 1.

Cassinia, Vol. V., 1901.

Condor, The, Vol. IV., No. 3.

Journal of the Maine Ornithological Society, The, Vol. IV., No. 2.

Maine Sportsman, Vol. IX., Nos. 103, 104, 105.

Ohio Naturalist, The, Vol. II., Nos. 5, 6, 7.

Our Animal Friends, Vol. XXIX., No. 9.

Plant World, The, Vol. V., Nos. 2 and 3.

Pollination of Flowers, The. Nature Study Leaflet No. 1. New Hampshire College Agricultural Experiment Station. Review of the North American species of *Athysanus*.

(Jassidæ.) Series 6, Nos. 14, 15, Ohio State University Bulletin, Dept. Zool. and Ent., Nos. 7, 8.

ERRATA.

Some distressing errors crept into the last number after the last proof left the editor's hands. They are as follows:

Page 7, line 12, for "scaps" read "scraps."

Page 8, line 4 from bottom, for "snipe" read "snipes."

Page 18, line 7 from bottom, for "quaked" read "quanked."

Page 22, line 15 from bottom, for "1902" read "1922."

Page 25, line 3, omit the word "no."

Page 29, line 3 from bottom, for "Ober-" read "Oberholser."

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The other numbers consist of "General Notes." Price 10 cents each. The whole available New Series for \$3.25.

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CONTENTS.

	PAGE
A Preliminary List of the Birds of Middle Southern Ohio. W. F. HENNINGER.	77
The Spring Migration of 1901, with an Average Table for Lorain County, Ohio. R. L. BAIRD.	94
Maryland Birds. J. H. LANGILLE.	101
Kirtland's Warbler (<i>Dendroica kirtlandi</i>) Again in Ohio. LYNDY JONES.	104
Editorial.	106
Notes:	
<i>Albino Robins.</i>	109
<i>Capture of an American Egret (Ardea egretta) in Chester County, Pennsylvania.</i>	109
Election of Officers for 1903.	109
Election of Members.	110
Publications Received.	110

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Articles of general interest relating to bird life are solicited. They should be in the hands of the editor not later than the 20th of the month preceding publication.

THE
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SEPTEMBER, 1902.

No. 3.

A PRELIMINARY LIST OF THE BIRDS OF MID-
DLE SOUTHERN OHIO.

BY REV. W. F. HENNINGER.

WHENEVER Dr. Wheaton, in his list of the Birds of Ohio, speaks of Southern Ohio, he refers either to Cincinnati or Circleville and vicinity. But Circleville, if we divide the State into three equal parts, does not even belong to Southern Ohio, but only to the southern part of Central Ohio. There is very little known concerning the avifauna of Southern Ohio; since 1796, when Wilson traveled through this region, practically nothing has been done ornithologically. The writer's observations in this paper are restricted to Scioto and Pike counties, and while he has done a great deal of work in Jackson and Ross counties, they are very similar to parts of Scioto and Pike county and their ornithology is likewise practically the same. The observations were made from three points principally: South Webster, in the extreme northeast of Scioto county; Wheelersburg, on the Ohio River, in the southeastern part of Scioto county; and Waverly, the county seat of Pike county. From Aug. 15, 1894, till Sept. 1, 1897, observations were confined to South Webster only. Both counties were traversed in every direction, as was also Jackson county, while Ross county's southern

part only was explored. The broad valley of the Ohio and the Scioto valley are the migration paths for the birds from the northeast to southwest and north to south. The rest of the two counties consists of various series of hills and small ravines and valleys. Along the creeks and rivers small groves are yet to be found, while the hills are covered with woods, sometimes in tracts of 300 to 400 acres. The forests consist mostly of deciduous trees, sparingly interspersed with a few pine trees at a few localities. This accounts for the presence of some rare species, while the bottom lands are drawing new species in every year. The climatic conditions are too well known to be mentioned in this connection.

No one knows better than the writer, how incomplete is this list of Southern Ohio birds; but not one record is given that has not been carefully scrutinized by the writer. The period of observation runs from Aug. 15, 1894, to July 1, 1902, but a busy professional life has made it impossible for the author to do "what he ought to have done." The excuse for making up this list is the fact that practically nothing is known of the ornithology of Central Southern Ohio, and that by it a gap in our knowledge of the birds of Ohio may at least partly be filled out. The writer will be glad of any corrections and any just criticism concerning this list.

The birds of this region are represented by 216 species which may be divided in the following way: residents, 42; summer residents, 61; regular transients, 64; irregular and rarer transients, 27; winter residents, 10; accidental visitors, 7; extinct, 2; introduced, 2.

Unless otherwise stated the species here enumerated are represented by specimens in the author's or local collections.

1. *Colymbus auritus*. Horned Grebe.—A fairly common transient in both counties on the different streams and ponds. Arrivals, Waverly, Pike county—April 20, 1900; April 26, 1901. Migrating, Sept. 18 to Oct. 24, 1901, 2 ♀ immature, 1 ♂ adult; 1 ♂ immature had flown against a telephone wire in the night of Sept. 17-18, 1901, and was captured alive.

2. *Podilymbus podiceps*. Pied-billed Grebe.—A very common transient in both counties. Perhaps a rare summer resident, as

I have seen a young one, shot on the canal (Portsmouth & Lake Erie) in July, 1898, in a local collection at Waverly.

3. *Gavia imber*. Loon.—A tolerably common transient. Most common during high water in both counties. Latest spring record, May 1, 1899, at Piketon; two females on April 22, 1901, in the writer's collection, at Waverly.

4. *Gavia lumme*. Red-throated Loon.—Rare. One specimen found dead on March 21, 1898, by my brother-in-law, near Wheelersburg, Scioto county, Ohio.

5. *Larus marinus*. Great Black-backed Gull.—Accidental. On March 21, 1900, while out duck hunting I observed one specimen of this superb species. While lying in a thicket on a small peninsula surrounded by the two arms of the Scioto River and a slough on three sides, a large gull alighted on the gravelly bank of the river, opposite me. Though the bird was out of shotgun range, with my field-glass I could easily tell the species. After staying there for about three minutes it raised its wings and soared majestically away, reminding one of the eagle's flight.

6. *Larus argentatus smithsonianus*. Am. Herring Gull.—A rather rare transient in Scioto county. A ♂ in second winter plumage, in the writer's collection, on March 8, 1901, on the Scioto River, Waverly.

7. *Sterna hirundo*. Common Tern.—A very rare transient visitor. A flock of about 20 seen Nov. 11, 1898, on the gravelly banks of the Scioto River at Waverly.

8. *Merganser americanus*. American Merganser.—A common fall and spring transient; often winter resident, but females only.

9. *Merganser serrator*. Red-breasted Merganser. A very rare transient. The only record is a female in the writer's collection, Dec. 5, 1899. It was on the banks of the Scioto River, near Waverly.

10. *Lophodytes cucullatus*. Hooded Merganser.—Fairly common as a spring and fall transient in this region.

11. *Anas boschas*. Mallard.—An abundant transient and winter resident. In 1899 a summer resident, as it was seen all summer in several pairs on the Scioto River, though the nest was never found at Waverly.

12. *Anas obscura*. Black Duck. A common spring and fall transient. Feb. 28, 1899; March 17, 1900; March 8, 1901; March 27, 1902; Oct. 7, 1899—migration dates for Waverly.

13. *Mareca americana*. Baldpate.—A pair, March 18, 1899, on the Scioto River. Very common March 10-17, 1900, on the Scioto River. Not observed since then.

14. *Nettion carolinensis*. Green-winged Teal.—A common spring transient. Not seen in the fall.

15. *Querquedula discors*. Blue-winged Teal.—Common spring and fall transient. Nov. 29, 1896; April 6, 1899.

16. *Spatula clypeata*. Shoveller.—A rather rare transient. A female March 28, 1900, and a young male Dec. 21, 1900, on the Scioto River. These are the only records.

17. *Dafila acuta*. Pintail.—The most abundant of all the ducks. Arrivals—Feb. 25, 1899; Feb. 14, 1900; Feb. 19, 1901. One male in breeding plumage, Oct. 10, 1901, on the Scioto River.

18. *Aix sponsa*. Wood Duck.—A summer resident. More common along Beaver Creek near Piketon, than elsewhere; otherwise quite rare.

19. *Aythya vallisneria*. Canvas-back.—Rare spring transient. Three observed on the Scioto River, April 15, 1899. A fine male shot on March 23, 1900, on the Scioto River, in the writer's collection. This is the only specimen of a genuine canvas-back taken in Pike county.

20. *Aythya marila*. Scaup Duck.—Rather rare as a spring transient. Observed April 20, 1900.

21. *Aythya affinis*. Lesser Scaup Duck.—An exceedingly common spring and fall transient observed as late as May 14, 1902.

22. *Aythya collaris*. Ring-necked Duck.—A rather rare transient in Pike; somewhat more common in Scioto county.

23. *Clangula clangula americana*. American Golden-eye.—A fairly common fall and spring migrant. Dec. 9, 1899; March 4, 1899; March 21, 1900. Found on running streams only, like the Pintail.

24. *Charitonetta albeola*. Buffle-head.—A common spring transient. Not recorded in fall. March 30–April 2, 1900, 2 females.

25. *Harelda hyemalis*. Old-squaw.—Very rare. Between Feb. 7 and 18, 1899, 9 specimens of this duck, 4 males and 5 females, were taken by local hunters. Two of these, a pair, are in the writer's collection. (Cf. Auk, Vol. XVI., July, 1899, No. 3, page 284.)

26. *Erismatura jamaicensis*. Ruddy Duck.—Not common. Seen in Scioto county only.

27. *Branta canadensis*. Canada Goose. A common winter resident; arriving in November, departing in March or April. Frequently kept in a state of domestication.

28. *Olor buccinator*. Trumpeter Swan.—A specimen of this species was shot in April, 1900, near Wellston, Jackson county, Ohio, and it is claimed, apparently with good evidence, that the same bird had been seen in Pike county previous to its having been shot in Jackson county.

29. *Botaurus lentiginosus*. American Bittern.—Not a common spring and fall transient. Oct. 24, 1899; Sept. 22, 1900; April 27, 1901.

30. *Ardetta exilis*. Least Bittern.—Seen June 2, 1898, along the canal; April, 1901, on the banks of the Scioto River.

31. *Ardea herodias*. Great Blue Heron.—A tolerably common summer resident. Arrives in March; leaves in December.

32. *Ardea caerulea*. Little Blue Heron.—On Aug. 1, 1901, I saw two birds of this species on the banks of the old arm of the Scioto River, one of which I shot after an exciting chase of about three hours. It was a young male. On Aug. 16 another specimen was added to my collection. All told, 4 specimens were captured and 4 others seen this month in Pike county. (Cf. Auk, Vol. XVIII., Oct., 1901, page 392.)

33. *Ardea virescens*. Green Heron.—A common summer resident. Arrival—April 28, 1898; May 6, 1899; April 20, 1900; April 24, 1901. Departure—Oct. 1, 1898.

34. *Nycticorax nycticorax naevius*. Black-crowned night Heron.—The only specimen of this species known to be taken in this region is a young female in the writer's collection, shot Nov. 18, 1898, on the banks of Crooked Creek, at Waverly,

35. *Grus americana*. Whooping Crane.—A rare transient. One specimen taken on the banks of the Scioto River, in Scioto county; in the collection of Mrs. Mary E. Bannon, Portsmouth, Ohio. One was kept in captivity in Waverly for a number of years. It had been winged.

36. *Rallus elegans*. King Rail.—Only one record. A male, in the writer's collection, May 26, 1900, on the banks of Crooked Creek, Waverly.

37. *Rallus virginianus*. Virginia Rail.—An abundant fall transient; not common in spring. Most likely a summer resident.

38. *Porzana carolina*. Sora.—A common fall and spring transient. Perhaps a summer resident; a young male having been captured Sept. 19, 1901.

39. *Gallinula galeata*. Florida Gallinule.—Rare. A specimen taken Nov. 16, 1898, is somewhat abnormal in coloration. Erroneously recorded as a Purple Gallinule in the Auk (Vol. XVI., Jan., 1899, page 75), which I would like to correct now.

40. *Fulica americana*. American Coot.—A common spring and fall migrant. Arrival—March 25, 1899; April 13, 1901. Departure—Oct. 15, 1898; Oct. 4, 1899; Nov. 1, 1901.

41. *Philohela minor*. American Woodcock.—Not a common summer resident. Arrival—April 20, 1897; March 23, 1900. Nest with 4 eggs found April 28, 1898, at Bloom Switch, Scioto county. The bird was so tame that it allowed a farmer ploughing near by to touch it with his whip-handle.

42. *Gallinago delicata*. Wilson's Snipe.—An exceedingly common spring (rather rare fall) transient. Arrival as early as Jan. 27, 1898; departure as late as Nov. 16, 1896.

43. *Tringa maculata*. Pectoral Sandpiper.—A rare transient in spring. A pair observed on March 28, 1900, and a flock of about 60 on March 30, 1900 in a wet gravel slough close to the Scioto River, Waverly.

44. *Tringa minutilla*. Least Sandpiper.—Rare. A pair observed

April 27, 1898, near Bloom Switch, Scioto county, while I was fishing on the banks of Hale's Creek.

45. *Totanus melanoleucus*. Greater Yellow-legs.—A common spring transient in wet seasons. March 14, 1899, taken on the banks of Scioto River; April 24 and 26, 1901, 4 captured on a wet meadow.

46. *Totanus flavipes*. Yellow-legs.—A common spring transient. Arrival—April 30, 1900; March 18, 1901; the latter is the earliest record for the State.

47. *Helodromas solitarius*. Solitary Sandpiper.—A common spring and fall migrant. Arrival—May 11, 1900; April 24, 1901; Oct. 24, 1901.

48. *Bartramia longicauda*. Bartramian Sandpiper.—A common transient, but rare summer resident. Oct. 23, 1898; April 26, 1901; March 21, 1902, the earliest record.

49. *Actitis macularia*. Spotted Sandpiper.—A common summer resident. Arrival—May 6, 1899; April 25, 1900; April 24, 1901; April 26, 1902. Departure—Sept. 8-9, 1899; Sept. 17-18, 1901.

50. *Aegialitis vocifera*. Killdeer.—A common resident everywhere, even on meadows far back in the hills.

51. *Colinus virginianus*. Bob-white.—A very common permanent resident.

52. *Bonasa umbellus*. Ruffed Grouse.—A fairly common permanent resident, but not found in the bottoms. Any tract of timber in the hills harbors this bird.

53. *Meleagris gallopavo fera*. Wild Turkey.—In former years a common resident; now extinct. This seems peculiar, as it must be remembered that wildcats and occasionally catamounts are still to be found in this region, which may be considered the least explored and wildest in Ohio.

54. *Ectopistes migratorius*. Passenger Pigeon.—Once an abundant summer resident. Several pigeon roosts in Pike county were well known to old settlers. On March 24, 1900, a solitary individual was shot by a small boy near Sargents, close to the boundary line of Pike and Scioto counties, and mounted by the late wife of ex-Sheriff C. Barnes, of Pike county. This is the only authentic record for twenty years.

55. *Zenaidura macroura*. Mourning Dove.—An abundant resident even in the severest winters, at sheltered places in the bottoms or upland.

56. *Cathartes aura*. Turkey Vulture.—A common summer resident; not so common in winter.

57. *Elanoides forficatus*. Swallow-tailed Kite.—A specimen of this rare bird was shot in August, 1898, near Chillicothe, Ross county, Ohio, and while not strictly belonging to this list, may well be counted with the birds of Southern Ohio.

58. *Circus hudsonius*. Marsh Hawk.—A fairly common fall and

spring transient and also a winter resident. I have found it in the bottoms only, and never seen it in summer.

59. *Accipiter velox*. Sharp-shinned Hawk.—A not common resident; mostly seen in the hills. A bold thief of young chickens.

60. *Accipiter cooperii*. Cooper's Hawk.—A common resident. The worst robber of the barnyard.

61. *Buteo borealis*. Red-tailed Hawk.—Very numerous in winter; not quite so common in summer. Breeds in the deep woods.

62. *Buteo lineatus*. Red-shouldered Hawk.—Only seen in winter, fall and spring, never in summer; and much less common than the preceding species.

63. *Archibuteo lagopus sancti-johannis*. American Rough-legged Hawk.—A fairly rare winter visitor. In the spring of 1899 five were taken on Feb. 5, 17, March 13 (two), 31. The last two are in the writer's collection. On Dec. 13, 1900, one in the black phase was shot, and in the same winter several more were killed; all by local hunters. (Cf. Auk, Vol. XVI., July, 1899, page 184.)

64. *Aquila chrysaetos*. Golden Eagle. A very rare winter visitor. Prof. W. M. Clayton, of the Waverly Public School (at present President of the Southern Oregon State Normal School), brought me a claw of this eagle, which had been shot about Thanksgiving, 1896, in Ross county, just across the Pike county line. (Cf. Bull. Mich. Ornithol. Club, Vol. II., No. 3-4, page 39.)

65. *Haliaeetus leucocephalus*. Bald Eagle. Not uncommon in winter. It is said to breed in the bottom lands, but I was unable to confirm this report.

66. *Falco sparverius*. American Sparrow Hawk. A very common and useful resident. Seldom molested by anybody. Frequently seen in towns.

67. *Pandion haliaeetus carolinensis*. American Osprey.—Not uncommon in spring, fall and winter, especially during high waters.

68. *Strix pratincola*. A fairly common resident in both counties especially in the bottom lands. I am inclined to believe that this species never was rare in Southern Ohio. Several specimens in the writer's collection in all ages and plumages.

69. *Asio wilsonianus*. American Long-eared Owl.—A rare winter visitor; not known in summer.

70. *Asio accipitrinus*. Short-eared Owl.—A very common winter resident; not observed in summer.

71. *Syrnium nebulosum*. Barred Owl.—A common resident; breeds in summer.

72. *Nyctala acadica*. Saw-whet Owl. A rare winter visitor. Two records only—a ♀ taken Nov. 26, 1898, and another Nov. 8, 1899, in the writer's collection. (Cf. Bull., Mich. Ornith. Club, Vol. II., No. 3-4, p. 39.)

73. *Megascops asio*.—Screech Owl.—Resident; the most common owl. Only one specimen in the rare intermediate plumage, Jan.

7, 1899, in the writer's collection. The gray and red phases about equally abundant. In the winter of 1900 a Screech Owl was killed by a farmer in the act of killing a chicken in his hen house.

74. *Bubo virginianus*. Great Horned Owl.—A common resident. Very injurious and killed on any occasion.

75. *Nyctea nyctea*. Snowy Owl.—One specimen was taken in the winter of 1897-98, on a farm near Waverly, and nailed to a barn door. I examined the specimen a few months later, when it was already badly decayed, but still easily identified. This is the only record.

76. *Conurus carolinensis*. Carolina Paroquet.—Common resident till 1840, since then extinct.

77. *Coccyzus americanus*. Yellow-billed Cuckoo.—A common summer resident. Arrival—May 8, 1897; May 5, 1898; May 5, 1899; May 7, 1900; May 8, 1901. Departure—Sept. 13, 1899; Sept. 22, 1900; Sept. 17, 1901.

78. *Coccyzus erythrophthalmus*. Black-billed Cuckoo.—Not a very common transient. Aug. 25, 1898; May 6, 1899; April 28, 1900.

79. *Ceryle alcyon*. Belted Kingfisher.—A common resident.

80. *Dryobates villosus*. Hairy Woodpecker.—Resident. Not as common in summer as in winter.

81. *Dryobates pubescens medianus*. Downy Woodpecker.—Resident. Same as preceding.

82. *Sphyrapicus varius*. Yellow-bellied Sapsucker.—A common spring and fall transient. March 21, 1898; Oct. 1, 1898; Oct. 4, 1899.

83. *Ceophloeus pileatus abieticola*. Northern Pileated Woodpecker. Till in the fall of 1900 this majestic bird was fairly common in some of the wild ravines of Pike county. Since then, owing to the cutting down of large timber, he has become rare. (Cf. Bull. M. O. C., Vol. II., No. 3-4, page 39.)

84. *Melanerpes erythrocephalus*. Red-headed Woodpecker.—A common summer resident, but not found in the upland region. Arrivals—May 5, 1899; April 23, 1900; May 4, 1901. Sometimes found in winter.

85. *Melanerpes carolinus*. Red-bellied Woodpecker.—A common resident everywhere. On Sept. 15, 1898, I found a number of these birds in a large open tract of timber, storing away acorns in the fashion of the preceding species. A great lover of ripe apples, it is nevertheless a very beneficial species.

86. *Colaptes auratus luteus*. Northern Flicker.—A common resident.

87. *Antrostomus vociferus*. Whip-poor-will.—A common summer resident. Arrivals—April 22, 1895; April 16, 1896; April 24, 1897; April 18, 1898; April 17, 1899; April 28, 1901. Departure—Sept. 21, 1895.

88. *Chordeiles virginianus*. Night-hawk. A common summer resident. Arrivals—April 30, 1895; April 23, 1897; April 25, 1898; May 1, 1899; April 23, 1900. Departure—Sept. 6, 1898; Sept. 9, 1899; Sept. 18, 1900.

89. *Chaetura pelagica*. Chimney Swift.—A common summer resident. Arrivals—April 21, 1895; April 17, 1896; April 22, 1897; April 14, 1898; April 15, 1899; April 15, 1900; April 12, 1901; April 19, 1902. Departure—Sept. 29, 1897; Oct. 2; 1899.

90. *Trochilus colubris*. Ruby-throated Humming-bird.—A common summer resident. Arrival—April 17, 1896; April 24, 1897; May 10, 1898; May 1, 1899; May 7, 1900. Departure—Sept. 18, 1896; Sept. 15, 1898; Sept. 8, 1899.

91. *Tyrannus tyrannus*. Kingbird.—A common summer resident. Arrival—April 14, 1896; April 20, 1897; April 24, 1898; April 16, 1899; April 19, 1900; April 28, 1901; April 25, 1902. Departure—Sept. 9, 1899.

92. *Myiarchus crinitus*. Crested Flycatcher.—A common summer resident. Arrival—April 26, 1901; April 28, 1902.

93. *Sayornis phoebe*. Phoebe.—A common summer resident. Arrival—April 22, 1897; March 14, 1898; April 6, 1899; March 28, 1900; April 2, 1901; March 22, 1902. Departure—Oct. 12, 1894; Sept. 30, 1898; Oct. 4, 1899; Oct. 19, 1900. April 28, 1902, I found a nest with 5 heavily incubated eggs, built on top of an old coffee pot hanging to a nail in an old log cabin, a somewhat unusual nesting site.

94. *Contopus virens*. Wood Pewee.—A common resident. Arrival—May 9, 1896; May 5, 1897; April 28, 1898; May 5, 1899; May 6, 1900. Departure—Oct. 17, 1894; Oct. 9, 1897.

95. *Empidonax flaviventris*. Yellow-bellied Flycatcher.—A rather rare spring transient. Data—May 7, 1897; May 17, 1898; May 2, 1901.

96. *Empidonax virescens*. Green-crested Flycatcher.—A common migrant; a few pairs breed. Data—May 22, 1897; May 18, 1899; May 7, 1900; May 2, 1901. Departure—Sept. 23, 1896; Sept. 21, 1899; Sept. 18, 1900; Sept. 18, 1901.

97. *Empidonax traillii*. Traill's Flycatcher.—A common migrant; a few pairs breed. May 22, 1897; May 17, 1898; May 7, 1900.

98. *Empidonax minimus*. Least Flycatcher.—A fairly common transient; may perhaps breed. May 22, 1897; May 23, 1898; Aug. 11, 1898.

99. *Otocorys alpestris praticola*. Prairie Horned Lark.—This species was first seen on Oct. 28, 1899, on a stretch of gravelly waste land. Since then it has become a permanent resident, breeding somewhat sparingly, at Waverly, Pike county.

100. *Cyanocitta cristata*. Blue Jay.—A fairly common resident, not so common in the bottom lands, and shows a decided preference for oak groves.

101. *Corvus americanus*. American Crow.—A common resident; occasionally "pied" ones are seen.

102. *Dolichonyx oryzivorus*. Bobolink.—A common spring transient, staying about one week. Arrival—April 29, 1899; May 11, 1900; May 4, 1901. Fall migration—Sept. 8-9, 1900; Sept. 10, 1901.

103. *Molothrus ater*. Cowbird.—A common summer resident. Arrival—May 9, 1896; April 23, 1897; April 10, 1899; March 13, 1902. Departure—Oct. 27, 1898. On April 28, 1902, I found an egg of this species in a nest of Bewick's Wren with 5 fresh eggs of the owner. This species is nowhere mentioned as a foster-parent of the Cowbird, not even in the late Major Bendire's great work. The whole set and nest are in my collection.

104. *Agelaius phoeniceus*. Red-winged Blackbird.—A very common summer resident, often nesting in clover fields. Arrival—March 12, 1895; March 30, 1896; March 6, 1897; March 8, 1898; March 11, 1899; March 21, 1900; March 18, 1901; March 21, 1902. Departure—Nov. 25, 1898; Nov. 4, 1899.

105. *Sturnella magna*. Meadowlark.—A common resident.

106. *Icterus spurius*. Orchard Oriole.—A common summer resident. Arrival—April 30, 1895; April 17, 1896; April 24, 1897; April 18, 1898; April 27, 1899; April 23, 1900; April 27, 1901; April 22, 1902.

107. *Icterus galbula*. Baltimore Oriole.—A common summer resident, increasing rapidly. Arrival—April 28, 1898; April 25, 1899; April 29, 1900; April 27, 1901; April 22, 1902. Departure—Sept. 9, 1898; Sept. 9, 1899; Sept. 30, 1900.

108. *Scolecophagus carolinus*. Rusty Blackbird.—Winter resident only; not so very common. Departure—March 10, 1898. Arrival—Dec. 9, 1899.

109. *Quiscalus quiscula aeneus*. Bronzed Grackle.—A very common summer resident. Arrival—April 8, 1895; March 28, 1896; March 8, 1897; March 8, 1898; March 4, 1899; March 5, 1900; March 6, 1901; March 10, 1902. Departure—Oct. 29, 1895; Nov. 12, 1897; Nov. 4, 1899; Nov. 2, 1900. In the summer of 1900 there was a large Grackle roost in the Water street Park at the canal in the midst of the village with all its noise and buzz. It came under my observation from July 8, on. The first Grackles would come in at 4 p.m., single ones, the rest generally in groups of three or in flocks at short intervals. The last ones in the morning would leave as late as 5 a.m.

110. *Carpodacus purpureus*. Purple Finch.—Rare. A female captured on Dec. 13, 1900, in a tangled mass of tall weeds bordering the Scioto River. Only record.

111. *Acanthis linaria*. Red-poll.—Very rare. Observed once on Jan. 15, 1898. The only record.

112. *Astragalinus tristis*. American Goldfinch.—A very common resident. On the increase.

113. *Poocetes gramineus*. Vesper Sparrow.—A common summer resident. Arrival—March 30, 1896; March 14, 1897; March 6, 1898; April 4, 1899; March 30, 1900; April 14, 1901. Departure—Nov. 5, 1894; Nov. 2, 1900.

114. *Ammodramus sandwichensis savanna*. Savanna Sparrow.—A common transient, but not so common as a summer resident. Arrival—April 28, 1898; April 5, 1899. Departure—Oct. 17, 1894; Oct. 29, 1897; Nov. 25, 1898.

115. *Ammodramus savannarum passerinus*. Grasshopper Sparrow.—A common transient. Also common summer resident in upland regions. Arrival—April 28, 1898; April 24, 1900; April 27, 1902. Departure—Sept. 29, 1899.

116. *Chondestes grammacus*. Lark Sparrow.—The finest songster of the North American Sparrows. It is, like the Savanna and Grasshopper Sparrows, constantly on the increase. It prefers the upland meadows, and has never been met by me in the bottoms. May 9, 1896; April 23, 1897; May 13, 1901.

117. *Zonotrichia leucophrys*. White-crowned Sparrow.—A common fall and spring transient. Spring—May 6, 1897; April, 23, 1898; May 9, 1899; May 7, 1900; May 2, 1901. Fall—Oct. 27, 1898; Oct. 19, 1900.

118. *Zonotrichia albicollis*. White-throated Sparrow.—A common winter resident. Arrival—Sept. 26, 1894; Oct. 4, 1895; Sept. 23, 1896; Oct. 29, 1897; Oct. 1, 1898; Oct. 3, 1899. Departure—April 23, 1897; April 23, 1898; May 9, 1899.

119. *Spizella monticola*. Tree Sparrow.—A common winter resident. Arrival—Oct. 8, 1894; Nov. 25, 1898; Dec. 9, 1899. Departure—March 28, 1897; April 6, 1900; April 26, 1901.

120. *Spizella socialis*. Chipping Sparrow.—Often resident except in cold winters. Common.

121. *Spizella pusilla*. Field Sparrow.—A common summer resident. Arrival—April 4, 1895; March 30, 1896; March 12, 1897; March 20, 1898; April 15, 1899; April 5, 1900; March 28, 1901. Departure—Oct. 8, 1894; Oct. 27, 1898. On Oct. 8, 1894, a male at South Webster, with an entirely white tail.

122. *Junco hyemalis*. Slate-colored Junco.—A common winter resident. Arrival—Oct. 17, 1894; Sept. 23, 1896; Oct. 9, 1897; Oct. 15, 1898. Departure—April 10, 1897; April 15, 1900.

123. *Peucaea aestivalis bachmani*. Bachmann's Sparrow.—Accidental. On April 23, 1897, a specimen was taken, and I again observed this species on May 6, 1897, at South Webster. (Cf. Bull. M. O. C., Vol. II., No. 1, Jan., 1898, pages 7-8.) This was the first published record of the occurrence of the species in the State. Since then Mr. H. C. Oberholser wrote me that there was a still earlier record for the State, but it was as yet unpublished.

124. *Melospiza melodia*. Song Sparrow.—A very common and constantly increasing resident.

125. *Melospiza lincolni*. Lincoln's Sparrow.—A common fall and spring transient in Scioto county. Not seen in Pike county till April 3, 1901, when it was common along the Scioto River.

126. *Melospiza georgiana*. Swamp Sparrow.—Observed only on April 15, 1898, at Waverly, in a low wet field, but common on that day.

127. *Passerella iliaca*. Fox Sparrow. Oct. 17, 1894, common migrant till Nov. 5, at South Webster. Common in Nov. 1897 in Pike county. Since then not seen.

128. *Pipilo erythrophthalmus*. Towhee.—Males common residents; females arrive about April 15, and stay until Nov. 15. (Cf. Bull. M. O. C., Jan. 1899, Vol. III., No. 1.

129. *Cardinalis cardinalis*. Cardinal.—A very common resident; most common in December.

130. *Zamelodia ludoviciana*.—Rose-breasted Grosbeak.—A very rare transient. May 13, 1897, Scioto county, is the only record.

131. *Cyanospiza cyanea*. Indigo Bunting.—A common summer resident. Arrival—May 9, 1896; May 6, 1897; May 1, 1898; April 24, 1899; April 30, 1900; April 26, 1901; April 27, 1902. Still singing, Sept. 24, 1898; Sept. 21, 1899; Sept. 22, 1900.

132. *Spiza americana*. Dickcissel.—April 13, 1896, is the only record for Scioto county; May 11, 1900, two males were taken in Pike county. Since then it has taken up its abode as a fairly rare summer resident in the Scioto Valley bottoms. Arrival—April 24, 1901.

133. *Piranga erythromelas*. Scarlet Tanager.—Not a common summer resident. Arrival—May 15, 1898; May 8, 1901. Departure—Sept. 26, 1894; Sept. 27, 1895; Sept. 18, 1900; Sept. 19, 1901.

134. *Piranga rubra*. Summer Tanager.—A very common summer resident. Arrival—May 28, 1897; May 22, 1898; May 21, 1899; April 23, 1900; April 30, 1901; April 28, 1902. Breeds in the early part of June.

135. *Progne subis*. Purple Martin.—A common summer resident. Arrival—March 29, 1895; March 29, 1896; March 19, 1897; March 20, 1898; March 25, 1899; March 27, 1900; March 12, 1901; March 24, 1902. Departure—Sept. 23, 1895; Oct. 10, 1897. On March 29, 1895, observed an albino at South Webster, but could not secure it.

136. *Petrochelidon lunifrons*. Cliff Swallow.—A fairly common summer resident, but very local in its distribution. May 7, 1898.

137. *Hirundo erythrogaster*. Barn swallow.—A common summer resident. Arrival—April 3, 1897; April 28, 1898; April 11, 1899; April 3, 1900; April 24, 1901.

138. *Riparia riparia*. Bank Swallow.—A common summer resident in former years, May 18, 1897; May 17, 1898; May 15, 1899. Since then not seen.

139. *Stelgidopteryx serripennis*. Rough-winged Swallow.—A com-

mon and increasing summer resident. Arrival—May 18, 1897; May 19, 1898; May 2, 1901.

140. *Ampelis cedrorum*. Cedar Waxwing.—A common resident. Never seen in cherry trees. A great lover of locusts, gumberries and pokeberries.

141. *Lanius borealis*. Northern Shrike.—A rare winter resident. Oct. 8, 1895; Oct. 6, 1899.

142. *Lanius ludovicianus migrans*. Migrant Shrike.—Not a common resident in both counties.

143. *Vireo olivaceus*. Red-eyed Vireo.—A common summer resident. Arrival—May 9, 1896; April 22, 1897; April 25, 1898; April 29, 1899; April 23, 1900; May 2, 1901; April 27, 1902. Departure—Sept. 27, 1899; Sept. 22, 1900.

144. *Vireo philadelphicus*. Philadelphia Vireo. A fairly common but irregular transient. April 30, 1898; Sept. 24, 1898; Oct. 2, 1899.

145. *Vireo gilvus*. Warbling Vireo.—A common summer resident. Arrival—May 9, 1896; April 22, 1897; April 23, 1898; April 26, 1899; April 19, 1900; April 26, 1901; April 23, 1902.—Departure—Oct. 15, 1898.

146. *Vireo flavifrons*. Yellow-throated Vireo.—A common summer resident, showing a great preference for tall oak timber. Arrival—April 24, 1897; May 1899; April 28, 1900.

147. *Vireo solitarius*. Blue-headed Vireo.—A rare transient. A male taken Oct. 19, 1900, in tall timber.

148. *Vireo noveboracensis*. White-eyed Vireo.—A rare transient; probably summer resident. May 22, 1896; May 6, 1897; May 15, 1899.

149. *Mniotilta varia*. Black and white Warbler.—A fairly common summer resident. Arrival—April 23, 1897; April 28, 1898; April 25, 1900; May 2, 1901.

150. *Helmitherus vermivorus*. Worm-eating Warbler.—A rare summer resident. May 6, 1897; May 17, 1898 and 1901.

151. *Helminthophila pinus*. Blue-winged Warbler.—A rather rare summer resident. May 16, 1900. A pair taken on July 26, 1900.

152. *Helminthophila rubricapilla*. Nashville Warbler.—A rare transient. Captured Sept. 21 and Oct. 4, 1899.

153. *Helminthophila peregrina*. Tennessee Warbler.—Exceedingly common as a fall transient everywhere. Sept. 24, till Oct. 4, 1898; Sept. 13, till Oct. 4, 1899; Sept. 22, 1900.

154. *Compsothlypis americana usneae*. Northern Parula Warbler. Very rare. Sept. 22, 1900, a number along the Scioto River.

155. *Dendroica tigrina*. Cape May Warbler. A rare spring, but common fall transient, especially in upland beech-woods. April 24, 1897; Oct. 3, 1898; Sept. 27, 1899; Sept. 18, 1900.

156. *Dendroica aestiva*. Yellow Warbler.—A common summer resident. Arrival—April 21, 1895; April 15, 1896; April 5, 1897;

April 19, 1898; April 20, 1899; April 19, 1900; April 28, 1901; April 21, 1902.

157. *Dendroica caerulescens*. Black-throated Blue Warbler.—A rather rare transient. April 15, 1896; May 2, 1898; September 18, 1900.

158. *Dendroica coronata*. Myrtle Warbler.—A common transient. April 23, 1897; May 2, 1898; April 23, 1900; April 28, 1902. Oct. 15-27, 1898; Oct. 19, 1900; Oct. 4, 1901.

159. *Dendroica maculosa*. A common transient. Sept. 22, 1896; Oct. 2, 1897; Oct. 15, 1898. Oct. 3, 1899; May 2, 1898.

160. *Dendroica rara*. Cerulean Warbler.—A rare summer resident. Young taken July 30, 1900.

161. *Dendroica pensylvanica*. Chestnut-sided Warbler.—A very rare fall transient. Sept. 28, 1899; South Webster.

162. *Dendroica castanea*. Bay-breasted Warbler.—A common fall transient only; generally stays in the tops of the tallest trees. Sept. 23, 1896; Sept. 14 till Oct. 15, 1898; Sept. 28, 1899; Sept. 18, 1900.

163. *Dendroica striata*. Black-poll Warbler.—A very common fall transient at any place. Sept. 26, 1894; Oct. 2, 1897; Sept. 24, 1898; Sept. 13 till Oct. 10, 1899; Sept. 18, 1900.

164. *Dendroica blackburniae*. Blackburnian Warbler.—Not common as a transient. April 30, 1900; Sept. 18, 1900.

165. *Dendroica dominica albilora*. Sycamore Warbler.—A rare transient. April 23, 1897. Common on Sept. 28, 1899. Observed in Scioto county only.

166. *Dendroica virens*. Black-throated Green Warbler.—A common transient. April 23, 1897; May 2, 1898; May 8, 1901; Oct. 8, 1894; Sept. 22, 1896; Oct. 1, 1898; Oct. 4, 1899; Sept. 22, 1900; Sept. 18, 1901.

167. *Dendroica vigosii*. Pine Warbler.—A rare breeder. Aug. 5, 1898, a young male still partly in first plumage. (Cf. Auk, Vol. XV., No. 4, page 331.) Also taken on Oct. 8, 1894.

168. *Dendroica palmarum*. Palm Warbler.—A common transient. April 23, 1897; May 2, 1898; Sept. 27, 1899; Sept. 22, 1900; Oct. 4, 1901.

169. *Dendroica discolor*. Prairie Warbler.—Accidental. Captured Oct. 8, 1894, at South Webster, Scioto county.

170. *Seiurus aurocapillus*. Oven-bird.—Fairly common as a summer resident. April 23, 1897; May 2, 1898; April 26, 1901.

171. *Seiurus noveboracensis*. Water-Thrush.—Rare. A specimen taken Oct. 1, 1898, at Piketon, is in the collection of Prof. W. M. Clayton, of Santa Anna, Cal. (formerly of Waverly, O.)

172. *Seiurus motacilla*. Louisiana Water-Thrush.—Rather rare as a summer resident. Arrival—April 5, 1897; April 30, 1898; March 28, 1901.

173. *Geothlypis formosa*. Kentucky Warbler.—A rare summer

resident. Arrival—May 6, 1897; April 28, 1898; May 6, 1899; May 17, 1901. Departure—Sept. 22, 1900.

174. *Geothlypis agilis*. Connecticut Warbler.—A very rare transient. Aug. 10, 1899, a pair at Waverly.

175. *Geothlypis philadelphia*. Mourning Warbler.—A very rare transient. Aug. 7, 1895, a pair seen at South Webster. Sept. 18, a young male captured at Jasper, Pike county.

176. *Geothlypis trichas*. Maryland Yellow-throat.—A common summer resident. Arrival—May 6, 1897; April 28, 1898; May 6, 1899; May 3, 1901; April 30, 1900. Sept. 22, 1900.

177. *Icteria virens*. Yellow-breasted Chat.—Exceedingly common as a summer resident. Arrival—May 9, 1896; May 6, 1897; May 2, 1898; May 9, 1899; April 30, 1900; April 28, 1902.

178. *Wilsonia mitrata*. Hooded Warbler.—A rare summer resident. May 6, 1897; Sept. 30, 1898; Sept. 28, 1899. Seen in Scioto county only.

179. *Wilsonia pusilla*. Wilson's Warbler.—A rather rare transient. April 25, 1897; May 15, 1899; Aug. 25, 1898.

180. *Wilsonia canadensis*. Canadian Warbler.—A rare transient. Oct. 24, 1898, observed in an apple tree about four feet from my face. The only record.

181. *Setophaga ruticilla*. American Redstart.—A fairly common summer resident. April 23, 1897; May 2, 1898; May 7, 1900; Oct. 15, 1898; Sept. 18, 1900.

182. *Anthus pensylvanicus*. American Pipit.—A rare transient. Two observed Oct. 29, 1898, at Waverly, O.

183. *Mimus polyglottos*. Mockingbird.—Very rare. A pair stayed all summer in 1901, at Waverly.

184. *Galeoscoptes carolinensis*. Catbird.—A common summer resident. Arrival—May 1, 1895; April 30, 1896; April 23, 1897; April 25, 1898; April 23, 1899; April 20, 1900; April 27, 1902. Departure—Sept. 26, 1894; Sept. 27, 1895; Sept. 23, 1896; Oct. 4, 1899.

185. *Toxostoma rufum*. Brown Thrasher.—A common summer resident in upland regions. On the decrease. Arrival—April 22, 1895; April 15, 1896; April 23, 1897; April 24, 1898; April 19, 1899; April 3, 1900; April 25, 1901; April 27, 1902. Departure—Sept. 26, 1894; Sept. 27, 1895; Sept. 22, 1896; Oct. 2, 1897; Sept. 30, 1898; Sept. 28, 1899; Sept. 22, 1900.

186. *Thryothorus ludovicianus*. Carolina Wren.—A common resident.

187. *Thryomanes bewickii*. Bewick's Wren.—Formerly rare, it has become a very common resident all through Southern Ohio.

188. *Troglodytes aedon*. House Wren.—Arrival—April 14, 1897; April 18, 1898; April 13, 1899. Since then it does not live in Southern Ohio, the better singer and thriftier species, Bewick's Wren, having taken its place.

189. *Olbiorchilus hyemalis*. Winter Wren.—A rare winter visitor in '94-5, '98-9.

190. *Cistothorus stellaris*. Short-billed Marsh Wren.—Accidental. Oct. 17, 1894, at South Webster.

191. *Cistothorus palustris*. Long-billed Marsh Wren.—A rare transient. Oct. 4, 1901, one in a thick clump of weeds on a gravelly slough near Waverly, is the only record.

192. *Certhia familiaris americana*. Brown Creeper.—A rare winter resident. April 13, 1898; Oct. 27, 1898, till Jan. 21, 1899; Jan., 1902.

193. *Sitta carolinensis*. White-breasted Nuthatch.—A very common resident.

194. *Sitta canadensis*. Red-breasted Nuthatch.—Rare. Jan., 1898, observed. Sept. 28, 1899, observed four, at South Webster, O.; one of which was captured. These are the only records.

195. *Parus bicolor*. Tufted Titmouse.—A very common resident. A great lover of gumberries.

196. *Parus atricapillus*. Chickadee.—A very common resident.

197. *Parus carolinensis*. Carolina Chickadee.—Not quite as common a resident as the preceding.

198. *Regulus satrapa*. Golden-crowned Kinglet.—A common transient. Not common as a winter resident. Oct. 19, 1898; Oct. 10, 1899; Oct. 19, 1900; April 24, 1901.

199. *Regulus calendula*. Ruby-crowned Kinglet.—A fairly common transient. April 18, 1898; Oct. 15, 1898; April 15, 1899.

200. *Poliophtila caerulea*. Blue-gray Gnatcatcher.—A common summer resident. Arrival—April 15, 1896; April 22, 1897; April 12, 1898; April 20, 1900; April 26, 1901; April 27, 1902; Sept. 18, 1900.

201. *Hylocichla mustelina*. Wood Thrush.—A common summer resident. Arrival—April 30, 1898; April 25, 1900; April 28, 1901; April 28, 1902.

202. *Hylocichla fuscescens*. Wilson's Thrush.—Mostly transient, occasionally a summer resident in Scioto county only. April 30 till Sept. 30, 1898.

203. *Hylocichla aliciae*. Gray-cheeked Thrush.—May 2, 1898, at Wheelersburg is the only record.

204. *Hylocichla ustulata swainsonii*. Olive-backed Thrush.—A fairly common transient. Sept. 26, 1894, feeding on gumberries, Sept. 22, 1900.

205. *Hylocichla guttata pallasii*, Hermit Thrush.—A common transient. May 1, 1898; Oct. 19, 1900; Nov. 25, 1898.

206. *Merula migratoria*. American Robin.—A common resident. In the fall great flocks from the North pass through, but a good many of those reared in Southern Ohio remain there all winter, mostly staying together in pairs, occasionally in great flocks at favorable roosting places.

207. *Sialia sialis*. Bluebird.—Common resident. Specimens of Feb. 16, 1900, showed that their winter food consists of dogwood berries and hack-berries. This was all the stomachs contained—not a trace of any insect.

INTRODUCED SPECIES.

1. *Phasianus torquatus*. Ring-necked Pheasant.—Seems to thrive well in places; in others not at all.

2. *Passer domesticus*. English Sparrow.—This terrible pest is not quite so numerous in Scioto county as it used to be. An albino in my collection was shot Sept. 24, 1898; in Nov., 1898, another one with white tail and primaries was shot. As common as ever in Pike county.

HYPOTHETICAL.

1. *Colymbus holboellii*. Holbell's Grebe.—A specimen seen Sept. 21, 1896, on a small pool in Scioto county.

2. *Aythya americana*. Red-head.—Very rare. Aug. 26, 1900, a male was observed swimming on the Scioto River at Waverly.

3. *Chen hyperborea nivalis*. Greater Snow Goose. Observed April 10, 1897, at South Webster, Scioto county; April 3, 1900, a large flock near Waverly.

4. *Anser albifrons gambeli*. American White-fronted Goose.—It is with great hesitancy that I admit this record, but the young man who shot the geese, "Brants," as he called them, just on the boundary line of Pike and Ross counties in the fall of 1900, gave me such an accurate description of this species that I finally concluded to admit it to this list.

5. *Aegialitis semipalmata*. Semipalmated Plover.—Accidental. Observed a pair(?) on April 22, 1896, at a small pool near Bloom Switch, Scioto county.

6. *Buteo platypterus*. Broad-winged Hawk.—Very rare. Observed but once on March 28, 1896, in the garden of the parsonage at South Webster.

7. *Helminthophila chrysoptera*. Golden-winged Warbler.—Very rare. Observed but once, May 6, 1897, at South Webster.

Addenda. In skinning Old-squaws I noticed that the skin pulls readily over the head as in the Mergansers, something I have not seen mentioned in any of the books. I have found the Coot to be an expert diver, a fairly good walker, and its flesh quite palatable, providing the Coot is skinned.

THE SPRING MIGRATION OF 1901.

WITH AN AVERAGE TABLE FOR LORAIN COUNTY, OHIO.

BY R. L. BAIRD.

Beginning with New Year's day I spent every possible minute that could be spared from other school work in the field with note-book and field-glasses. As I was unable to be in school the last six weeks of the winter term, an especial opportunity offered for such work.

This paper will be divided into three main heads: first, the field in which I have mainly worked; second, the migration itself and its attendant conditions; and third, a migration table for Oberlin and the vicinity which I have made out from Mr. Lynds Jones's check-books from 1896 to 1900 and from my own.

The principal scene of work has been Oberlin and its vicinity. Outside of this immediate neighborhood I have worked mainly between Oberlin and Lake Erie, a distance of twelve miles. Nearly every week this territory was gone through, either a-wheel or on foot, generally the latter. The route usually taken was in a direction slightly northwest from Oberlin to Beaver Creek, south of South Amherst, and from there its course was followed to the lake. Through most of this distance the creek flows through a wide valley with steep sides, a large part of which is well wooded. In places there are evergreen groves. Just south of South Amherst is a cemetery in which small evergreen trees are very thick, shading most of the ground. In the early part of the year I found this quite a favorite resort for birds, there being always a large number of individuals as well as species.

For three miles south from Lake Erie there are comparatively heavy woods and frequent slashings of second-growth timber. The land is much cut up and there are numerous

runs and small creeks whose banks are covered with alders and sumac bushes.

Oak Point, a summer resort on the lake shore, half-way between Lorain and Vermilion, is always the main objective point in these tramps. Here there are fairly thick woods and several swamps which are more abundant in species than any other place I have visited in the county. It has proved the best place for ducks and the shore birds.

Near Oberlin the best place has been found to be a woods a mile south of town, known as the South Woods. This woods is quite dense with tall, straight, slender trees. Along the edges is a thick second growth of small trees and on the northern side a slashing with many bushes and brush piles.

A mile northeast of town is another woods as good, perhaps, as the South Woods, but not so easy of access. A little farther beyond is a woods known as the Black Swamp woods. This has promise of rich finds for the one who can work it up, but so far as I know it has never been thoroughly gone over. It is very difficult to work for two reasons: first, the swamps render it almost impenetrable, especially during the spring; and secondly, the mosquitoes are almost unendurable. The southern division of the L. S. & M. S. railway runs past this woods, and as far as I have gone along the track, species and individuals have been abundant, and in the latter part of May nests were found at every few steps.

Black River would be good working ground, I think, but as it is farther away it is inconvenient to visit frequently. Several times I did get over and was rewarded each time by finding new species. It is said that birds migrate along the water-courses. The amount of water in the river, on account of the Elyria water-works dam, ought to afford a good resting-place to migrating water birds. The river averages six feet deep and is from thirty to eighty feet wide for several miles where it is nearest to Oberlin. The banks are well wooded.

In the town itself there are two places worth mentioning: a block in the south-western part of town, and the college

campus. On the first a part is almost as wild as any woods. There is in it a perfect tangle of willow trees, Osage orange hedge, and grape-vines. Through this Plum Creek flows. Next to this section is an orchard, and beyond the latter the station and reservoir of the city waterworks. Upon the reservoir I recorded nineteen species of water and shore birds alone during the spring. Many of these were rare, and to find them here in town is the more remarkable. There are dwellings, too, all along one side of the block.

The campus seems to be a favorite place for the birds and especially for the warblers. On May 18, when the warbler migration was at its height, I found thirteen species in the grove, back of the college chapel, which is not more than a hundred feet square. Besides the warblers there were at least twenty-five to thirty other species present. I have watched the campus for several years, and it seems as if more species were coming there each year. Two, at least, have come this year that have not been recorded there before, the Red-shouldered Hawk and the Indigo Bunting. The latter has been seen along the streets leading up to the campus from the south, but never before on the campus itself.

So much for the field. The season was remarkable for its long continued cold weather. January opened up cold, but a warm wave came on the 7th which continued until the 28th, except for one cold snap on the 19th. The prevailing winds were northerly for the first few days, but from the 10th to the first of March they were almost uniformly from the west. There was no movement of birds whatever in January.

February was remarkable for its long and steady cold. There were but four clear days in the month. I examined the thermometer regularly at breakfast time, and on only seven days was the temperature above 20° Fahrenheit. The ground was covered with snow the whole month. But one species arrived during this time. On the 16th the temperature was 25°, also on the 17th; on the 18th, 32°. Blue-

birds came one the 17th; very few, however, if more than one or two. One was reported each of the remaining days of the month.

On the morning of March 1st the temperature rose to 32° , with the wind blowing steadily from the south. It continued warm for four days, when the first definite bird wave appeared. Four species arrived and four departed. The arrivals were Rusty Blackbird, Robin, Killdeer, and Canada Goose. This was the only definite wave of this month. The remainder of the month was characterized by rainy and cloudy weather, there being only four clear days. The wind was exceedingly fickle, often changing as many as three times a day, blowing very frequently in the evening and afternoon from the opposite direction from what it did in the morning. However, during this time there were thirteen scattering arrivals and two departures.

April was but a continuation of the March weather, being damp and chilly. The prevailing winds were northerly and the average morning temperature was 38.6° . There was no definite wave this month, all the arrivals being scattering. The bird population was greatly increased, Meadowlarks especially being abundant and Mourning Doves and Flickers common. During the month there were thirty-nine arrivals and twenty-one departures, no more than three or four occurring in one day.

The month of May, too, was damper and colder than usual. The average morning temperature was 50° . The winds were northerly and steadier than in April. During the month fifty-seven species arrived and thirty-seven departed. There were two very definite waves. The first came on the opening day when fifteen species arrived and two departed. This was the warmest day of the year up to this time. The temperature then fell till the 5th, when it rose to 50° . On the following day, the 6th, was the best defined wave of the season. Twenty species arrived and three departed.

The season has been characterized by the long continued

cold and damp weather, and consequently by the later arrival of most of the species by nearly a week on the average.

That the figures I have given above for the three months of March, April, and May may be the more easily compared, I will arrange them tabularly as follows:—

	ARRIVALS.	DEPARTURES.	TOTAL MOVE'T.	PERCENT.
March.....	17	6	23	12.9
April.....	39	21	61	34.1
May.....	57	37	94	53

As to the records for the year. On March 1st we found a Brown Creeper. This was distinctively a winter record. The whole month preceding had been cold, with a foot of snow on the ground. No other one was recorded till more than a month later. I may add that in the last two months (January and February, 1902,) we have found a good many of the Creepers here. Before this I believe they had not been recorded here as winter residents. Mr. Jones made one new county record, the Hooded Warbler, on May 9.

The following average spring migration table is made out from the records of six years from this vicinity. Those after which I have placed an M are migrants and remain here but a short time. Those with no mark remain through the summer. Those that stay here during the winter, but leave in the spring, I have not included. There are about forty winter residents here. A few individuals of those which I have indicated as summer residents are found here during the winter, but I think it may be questioned whether they are the same individuals that are here in the summer. They may be visitors from farther north. Among such are the Robin, Bluebird, Flicker, Mourning Dove, Song Sparrow, Meadowlark, and others. The dates under which I have placed such in the list are those on which the numbers have increased very plainly, probably by migrants.

[The following table is like the series published in "Bird Lore" during 1901, but attempts to give all of the migratory birds of the county based upon the average of actual records.—ED.]

February 15-28.

Bluebird.

Robin.

March 1-10.

Song Sparrow.

Mallard, M.

Bronzed Grackle.

Red-winged Blackbird.

Killdeer.

Meadowlark.

Rusty Blackbird, M.

March 10-20.

Flicker.

Shoveller, M.

Ruby-crowned Kinglet, M.

Black Duck, M.

Mourning Dove.

Canada Goose, M.

Towhee.

Fox Sparrow, M.

Cowbird.

Belted Kingfisher.

Yellow-bellied Sapsucker, M.

Migrant Shrike.

March 20-31.

Woodcock.

Pintail Duck, M.

Sparrow Hawk.

Brown Creeper, M.

Phoebe.

American Merganser, M.

Field Sparrow.

Green-winged Teal, M.

Vesper Sparrow.

Great Blue Heron.

Red-head Duck, M.

April 1-10.

Wilson's Snipe, M.

American Coot, M.

Chipping Sparrow.

Red-breasted Merganser, M.

Pied-billed Grebe, M.

Ring-necked Duck, M.

Lesser Scaup Duck, M.

American Crossbill, M.

Purple Martin.

April 10-20.

Chimney Swift.

American Scaup Duck, M.

Bartramian Sandpiper.

Swamp Sparrow, M.

Buffle-head Duck, M.

Horned Grebe, M.

Barn Swallow.

Wood Duck, M.

White-throated Sparrow, M.

Ruddy Duck, M.

Red-breasted Nuthatch, M.

Bald-pate, M.

Cooper's Hawk.

Hooded Merganser, M.

Spotted Sandpiper.

Myrtle Warbler, M.

Hermit Thrush, M.

Brown Thrasher.

April 20-30.

Red-headed Woodpecker.	Grasshopper Sparrow.
Yellow Warbler.	Bank Swallow.
House Wren.	Blue-gray Gnatcatcher, M.
Warbling Vireo.	Tree Swallow, M.
Baltimore Oriole.	Green Heron.
Catbird.	Palm Warbler, M.
Cliff Swallow.	Lark Sparrow, M.
Black-throated Green Warbler, M.	Wilson's Thrush.
Bobolink.	Solitary Sandpiper.
Red-eyed Vireo.	Blue-winged Teal, M.
Oven-bird.	Pine Warbler, M.
Louisiana Water-Thrush.	American Bittern.
Kingbird.	Greater Yellow-legs, M.
Crested Flycatcher.	Prairie Warbler, M.
Least Flycatcher, M.	Savanna Sparrow, M.
Maryland Yellow-throat.	Rough-winged Swallow.
Blue-winged Warbler.	Scarlet Tanager.
Black and white Warbler	Nashville Warbler, M.
Wood Thrush.	American Redstart.
Olive-backed Thrush, M.	

May 1-5.

Black-throated Blue Warbler, M.	Yellow-throated Vireo.
Magnolia Warbler, M.	Chestnut-sided Warbler, M.
Rose-breasted Grosbeak.	Blackburnian Warbler, M.
Indigo Bunting.	Orchard Oriole.
Orange-crowned Warbler, M.	Whip-poor-will.
White-crowned Sparrow, M.	Yellow-breasted Chat.
Cerulean Warbler.	Green-crested Flycatcher.
Water-Thrush.	Long-billed Marsh Wren.
Blue-headed Vireo, M.	

May 5-10.

Wood Pewee.	Hooded Warbler, M.
Cape May Warbler, M.	Golden-winged Warbler, M.
Parula Warbler, M.	Bay-breasted Warbler M.
Lincoln's Sparrow, M.	Canadian Warbler, M.
Common Tern.	Ruby-throated Hummingbird.
Wilson's Phalarope, M.	Tennessee Warbler, M.
King Rail.	Black-billed Cuckoo.
Virginia Rail.	Yellow-billed Cuckoo.
Sora.	

May 10-15.

Trail's Flycatcher, M.	Gray-cheeked Thrush, M.
Black-poll Warbler, M.	Short-billed Marsh Wren.
Bay breasted Warbler, M.	Wilson's Warbler.
Mourning Warbler, M.	Turnstone, M.
Least Sandpiper.	Nighthawk.
Black Tern.	

MARYLAND BIRDS.

BY REV. J. H. LANGILLE.

Having spent the entire spring and the summer thus far, in riding over Montgomery county, Maryland,—the county just north of the District of Columbia,—I have had an admirable opportunity for the study of the common land birds of this locality. Then, too, as my work is in connection with the public schools, in which there are not a few who are now working up to the delights of ornithology, I get many valuable notes beyond my own observations.

To begin with the thrushes, the Wood Thrush, the only thrush residing here excepting the Robin and Bluebird, is everywhere abundant. The magnificent white-oak forests of our county, with their mixture of great tulip trees and undergrowth of dogwood, not to speak of the many springs and running streams in these parts, afford an agreeable habitat for this arboreal species. Reaching us in the last days of April, it immediately greets us with its suggestive and flute-like melody, everywhere awakening the sweetest woodland echoes, which melody continues to the end of July. It is known here by the people as the "wood robin."

When we came here, seventeen years ago, the Robin was being slaughtered in the spring and fall migrations for food. Of course this was very bad economy, when ten cents' worth of beef would make as much in the pot as a whole dozen of these useful birds; but little was thought and less known of the birds here in those days. Then but few Robins remained here to breed, and those appeared so scared that one seldom heard the sweet and cheerful warble of that species, so characteristic of our more northern climes. Four years ago last winter we succeeded in getting a law passed protecting the Robin throughout the year, and every sum-

mer since that they have been staying in increasing numbers, until this summer they are really abundant—so readily do birds respond to measures of protection.

With the Robin we naturally associate the Catbird, the Brown Thrasher, and the Mockingbird, the two former very abundant here and the latter not at all uncommon. On the Chesapeake Bay it is numerous the year round. Many absurd notions exist in the common mind here concerning the Catbird. It is universally charged with pulling up corn, though stomach examinations as well as the form of the bill show but slight evidence in this direction. The children say it calls snakes; and one lad in school went so far as to say, that the last eggs laid by that bird all hatch out snakes. Of course the poor bird is stoned and shot and its nest is broken up by all those under the influence of these mistaken notions.

Naturally enough, too, one associates with the Wood Thrush the Oven-bird (*Seiurus aurocapillus*), which abounds here throughout the forest. Up to the time of the appearance of "Wake Robin" by John Burroughs, the familiar woodland chant of this species was supposed to be its only song. He calling attention to its pleasing crepuscular flight song, we watched many weary hours in our ornithological studies in Western New York, in order to verify for ourselves this new bird note; but excepting one midnight performance, beginning in the ordinary chant and ending in a beautiful warble, we utterly failed of success. On coming to Maryland, we experienced a new era in this respect. In clearing up the land and planting our new fruit garden of some eighteen acres, we found the tall forests around us occupied in every direction by this species; and this flight song was one of the commonest occurrences. Indeed we have heard it at about all hours of the night, and not infrequently during any hour of a cloudy day. The performance is most common, however, between sunset and dark. Then the bird soars high above the tree-tops, and hovering at about the same point for a few seconds, utters a sweet, flow-

ing warble not unlike that of the Goldfinch and Indigo Bunting and almost as sprightly as that of the House Wren, after which it drops down into the tree-tops almost as if shot, and remains silent till soaring again. Indeed its chant is seldom heard at this time of day. Of course its oven-shaped nest is common in our forests up to the very borders, and all too commonly the sitting bird becomes the prey of some prowling cat.

Unless the eye and ear are well trained to the birds, one might very easily confound the above species with the Indigo Bunting, the song flight of which is quite common to these parts and decidedly similar. It is not so much in the forest, however, more out from the forest in the open field, or from the top of some solitary tree of the meadow or pasture, and the song is not so loud. The Indigo Bunting, as well as the Goldfinch, is quite common here, the latter being resident in flocks during winter.

Meadowlarks are common here throughout the year. Bobolinks pass through in considerable numbers, but do not remain. The Orchard Oriole is abundant, but the Baltimore Oriole can hardly be called common in the nesting period. I have never found the Cowbird's egg in the nests of the smaller birds. The Red-winged Blackbird is common to swampy places, but not really numerous, and the Purple Grackle seems confined to certain places where the Lombardy poplar or dense evergreens darken the yard. Blue Jays are common, and, as we are in the regular Crow belt, they breed here, the American as well as the Fish Crow, and congregate in vast numbers in winter. From October till April, Juncos are here in vast flocks, with a liberal accompaniment of Tree Sparrows and an occasional White-throated Sparrow, the latter favoring us with its song during the balmy days of autumn and in early spring.

The Cardinal is common throughout the year, as also is the Bluebird. The Rose-breasted Grosbeak is rare in the migration, and I have found one pair of the Blue Grosbeak here late in June. The Phoebe and the Wood Pewee

are common, as also is the Crested Flycatcher, and the Kingbird is abundant. The warblers common to our line are in full force during the migrations, but the Maryland Yellow-throat and the Prairie Warbler are the only summer residents which we have met, except the Black and White Warbler. The Carolina Chickadee is common, as also is the Tufted Titmouse, both of which are resident throughout the year. The Song and Vesper Sparrows are common, the former throughout the year and the latter from late in March till October, while the Field and Grasshopper Sparrows spend the summer in great numbers.

KIRTLAND'S WARBLER (*Dendroica kirtlandi*) AGAIN IN OHIO.

BY LYNDS JONES.

Just at the close of a canoeing trip of a week down the Muskingum and Ohio rivers from Zanesville to Ironton, Rev. W. L. Dawson and the writer chanced upon two real live specimens of this rarest of the warblers, one of them in song. The place is opposite Ashland, Ky., about half a mile back from the Ohio River, along one of the roads leading up a rather narrow run, then dry. The time was about 10 o'clock A.M., August 28. The first bird seen was under close scrutiny of two 8-power Bausch & Lomb Stereo-Binoculars for fully twenty minutes, in low willow and locust trees bordering the road. The precipitous hillsides afforded an opportunity for close study of the bird from above, besides the closer views from the road below. The second bird was discovered by the first near the ground, when the two proceeded to play tag in true bird fashion. Both birds came within thirty feet of us while feeding, and afforded the

best of opportunity to study their markings. We noted that the back lacked the definite black stripes of the spring specimens, and was somewhat overlaid by brownish. The tail spots and underparts corresponded with the spring plumage.

The song was the usual autumn caricature of the spring song, with rather a strong tendency to the squeakiness of the Prairie Warbler combined with the song of the Myrtle Warbler. The birds looked large for warblers and were deliberate in movement, making the squeaky song seem out of proportion.

If I mistake not, this is the first fall record for Ohio, and, indeed, for the interior of the country.

THE WILSON BULLETIN.

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Edited by LYND'S JONES.

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EDITORIAL.

The outlook for 1903 seems bright. We have a largely increased membership already, and the probabilities are for a still larger increase before the close of this year. The subscription list is constantly growing and the interest of all bird students in our work is showing itself more and more. We already have nearly ready for publication several papers which must prove valuable additions to our chosen science. At least one more Sectional Bird Census, a comprehensive study of Mourning Dove, a paper to follow Lorain County Winter Birds, on the breeding birds, and another to follow these two on The Terms Used to Denote Relative Abundance. These are some of the definite promises for next year. We hope, also, to be able to introduce our readers gently to some of the world problems in ornithology, by means of personal work in certain foreign fields which some of our members or friends have been doing. We have not exhausted America yet, to be sure, but a broader view can in no wise be detrimental to our understanding of our own birds. It should be a material aid. The world is so much smaller than it was five years ago that we begin to long for some of its good things beyond our own home land.

It may be of interest to readers of the BULLETIN, as well as to members of the Wilson Chapter, to learn something of what is being done by some of our active ornithologists.

Mr. R. L. Baird, one of our recently elected members, has finished his work for the Bachelor's degree in Oberlin College, and has gone to Denmark, Iowa, to take charge of an academy. He promises some interesting notes from that extreme southeastern part of Iowa.

Mr. Walton I. Mitchell, of St. Paul, Minn., will be graduated from the Hahnemann Medical College of Philadelphia, in the spring of 1903, and will return to New Mexico to begin practice. We may feel assured of his continued study of the birds in that interesting region.

Our Secretary, John W. Daniel, Jr., has been exploring the Dismal Swamp, and reports a very pleasant and profitable time there. Such places, especially if they be threatened with destruction, should be thoroughly explored at once, in order to determine the influence of the changed conditions in the years to come.

Our Vice-President, Mr. N. Hollister, Delavan, Wis., writes from Rockland, Texas, under date of July 12, that while the weather is *rather warm*, he is enjoying the work with the Biological Survey of the Department of Agriculture. They are working down Eastern Texas to Beaumont, and go from there to the Desert.

Mr. Harry C. Oberholser, of the Biological Survey, Department of Agriculture, writes from Texarkana, Arkansas, that he is engaged upon a state list of the birds of Texas. His remark that it is a good-sized contract is well to the point, since about half of the whole North American list is accredited to Texas. We await the results of his work with much interest.

Our well-known member, Mr. Benj. T. Gault, Glen Ellyn, Ill., writes under the date of Sept. 1st, that on the 9th Mr. George K. Cherrie, Brooklyn, N. Y., and himself sail for South America. Their destination is to be French Guiana at Cayenne. They will be gone all winter, and will be occupied with both Ornithology and Botany, with much else as incidental. It is needless to say that we shall hear from Mr. Gault. He has our hearty good wishes for a most successful and pleasant trip.

Our former Secretary, J. Warren Jacobs, Waynesburg, Pa., has about ready for mailing a neat illustrated booklet giving the results of six years' observation of his own fine colony of Purple Martins. We are pleased to note in a Waynesburg newspaper of recent date, editorial comments on the arrest and punishment of thoughtless "sportsmen" for shooting birds out of this colony.

Rev. J. Hibbert Langille, our Honorary member at Kensington, Md., is putting a revised edition of his "Our Birds in their Haunts" into the schools of that county. This book, in the original edition, was the second book on birds which the writer purchased, the first being Coues's "Key." "Our Birds in their Haunts" has always possessed the charm of bringing one closer to the birds as we actually find them than any other book among the many which now call for our attention. We are impressed with the feeling that the author has not simply gone into the fields and woods in search of the birds at all seasons and under all conditions, but has actually written on the spot much of what has gone into his book. We are glad that the school children are to be introduced to the birds by means of this book in its revised form.

Rev. W. Leon Dawson, of Columbus, Ohio, has temporarily laid down his ministerial work for the purpose of writing a book on the Birds of Ohio. The book will contain 80 colored plates and 200 half-tone reproductions of photographs. It will be in the popular scientific style, with full descriptions of the plumages and habits of every bird known to occur in the state (which includes 322 species to date), treated in 500 pages, of large clear type. It is to be exclusively a subscription book and will not be put upon the open market. The introduction and analytical and artificial keys will be written by the editor of the BULLETIN. In preparation for this work Mr. Dawson and the writer spent ten days together in the southeastern part of the state, along the course of the Ohio River, studying the birds and the peculiar conditions of topography of the region, and taking photographs of typical nesting-places of the birds which are found there in summer. Two half-days spent at McConnellsville with Messrs. C. H. Morris and E. J. Arrick were among the most enjoyable of the trip. Ohio lies so nearly in the transition region between the extreme east and middle west that its bird life is more than usually interesting. The plan of the Birds of Ohio contemplates making it by far the best book ever published on the birds of any state. The author's fitness for such an undertaking cannot be questioned.

NOTES.

ALBINO ROBINS.—Two years ago (in 1900) a Robin with numerous white feathers about the back and breast, and with two or three white tail feathers, was found raising a family on Morgan street in Oberlin. That same bird returned last year and this and raised a family. During July and August of last year (1901) a Robin with rather more white than the Morgan street individual possessed, made its appearance on North Professor street. To all appearance it was a bird of the year, and a female. Nothing was seen of this new individual during the breeding season, but during July and August, and to date, a Robin all white except the head and upper breast and one or two tail feathers and three or four wing feathers, has been a common sight, morning and evening, near the place where the second partial albino was discovered last year. In fact, not less than three partial albinos have been seen in Oberlin during the summer. The first one, the Morgan street female, was carefully protected, and the others have also been as carefully watched over, and it does not seem unlikely that we have developing in our midst a colony of partial albino Robins, at least one of the offsprings of which each year shows increasingly a tendency to albinism. If the birds were only content to remain with us all winter the possibility of preserving the colony would be good, but the dangers of migration make their return next season uncertain.

CAPTURE OF AN AMERICAN EGRET (*Ardea egretta*) IN CHESTER COUNTY, PENNA.—Mr. Gallagher, of Berwyn Mills, one mile southeast of Berwyn, shot a male in summer plumage, in his father's meadow along Darby creek, early in the morning of July 26, 1902. It had probably wandered up the creek from the Delaware river during one of the rainy days of the unusually stormy July. Measuring: Bill, 4.25; tarsus, 6.20, and wing, 16.00, in inches; it shows up remarkably large in comparison with a Florida specimen secured recently from Frank B. Webster.—FRANK L. BURNS, Berwyn, Penna.

ELECTION OF OFFICERS FOR 1903.

Active members of the Wilson Chapter have already received notice of the election of officers for the coming year. Let me urge upon each member the importance of making nominations for

each office. You will thereby show your interest in the affairs of the Chapter, and in so far encourage the officers to plan for the future. The existence of such an organization depends upon the interest and activity of every member. The officers can only carry out the ideas submitted by the membership as a whole; they cannot hope to enlist interest in plans which may run contrary to the opportunities and inclinations of others, as any arbitrary plans are likely to do. Before you have time to forget about it make your nominations and send them to the President, Lynds Jones, Oberlin, O.

ELECTION OF MEMBERS.

The following persons make application for membership in the Wilson Chapter:

For Active membership—

Rev. W. F. Henninger, Tiffin, Ohio.

Mrs. Leland L. Gibbs, Antigo, Wis.

Mrs. Stephen Cobb Goss, Hyde Park, Ill.

For Associate membership—

Harold Bowditch, Jamaica Plain, N. Y.

Henry A. Slack, Hurstville, N. Y.

PUBLICATIONS RECEIVED.

PACIFIC COAST AVIFAUNA, No. 3. Check-List of California Birds, by Joseph Grinnell. Cooper Ornithological Club of California.

This is more than merely a check-list, for besides the serial and A.O.U. numbering, the scientific names with double authority, and the vernacular names, a scientific synonymy and the "status" of each of the 491 species and 33 hypothetical species, is given. The "Status" includes both the time of year during which the birds are in California, and the regions where they have been found. Two colored maps giving the life zones and faunal areas of the state add materially to the value of the pamphlet. The author is to be heartily commended for his attitude of conservatism toward all questionable records. The relegation of questionable species to the Hypothetical List does no one injustice, and saves the list from criticism. We must admit to a

feeling of startled surprise in being confronted with such familiar personages as Cooper Hawk, Anthony Green Heron, and the like. Omission of the apostrophe and final s is a great convenience in the preparation of manuscript, but at first sight a list looks bob-tailed without them. We would not be sorry, however, to have Mr. Grinnell's system prevail. It is hard for one to appreciate the great difficulties which must be overcome before anything like a complete or correct list of the birds of a state situated like California can be made. The Cooper Club gives evidence, in this list, of the stuff of which it is made and of the men who compose its membership. Mr. Grinnell proves his right to a place at the top.

THE BIRD CALENDAR, by Clarence Moores Weed. The Nature Calendar Series. Rand, McNally & Co., Publishers, Chicago, New York, London.

In this Bird Calendar Professor Weed recognizes "that the most important part of Nature Study in schools is to get the pupil to see for himself and to record his observations accurately." This Calendar is designed to meet the need for some guide to the young student of Nature. First of all a list of 80 species is printed, with space at the bottom of each page for several more to be written in if necessary, with space at the right for recording the date of arrival and the date of nesting of each species. The right-hand page is reserved for remarks. Following this list for migration and nesting records, a half-page is given for records for each day from March 15th to June 30th. For each day two lines are given to each of the following: New arrivals; New nests; I saw these birds to-day; I recognized the voices of these. At the close of each month space is left for a summary of the month. The last nine pages contain directions for "Observations on Nest." The Calendar is in good form for permanent preservation and should prove a valuable aid in the Nature Study work in the schools. Single copies are 10 cents; per dozen \$1; per hundred \$7.

OUR BIRDS IN THEIR HAUNTS. Rev. J. Hibbert Langille, M. A. Published by the Author at Kensington, Md.

This well known book, written from the standpoint of a true lover of the birds and all Nature besides, comes to us in a new dress which adds to its attractive appearance. A better binding than the old style makes a volume which school children can use without fear of tearing it to pieces at once. It is a book well adapted, for the most part, for use as a reader in the middle and higher grades, tending strongly to stimulate intelligent study of of the birds in particular and Nature in general. The keen sym-

pathy of the writer in all that he has seen and writes about can but create in the reader something of the same warm feeling for what surrounds us. It is rarely the case that a book of this style is so free from errors of identification. The author has made wise use of the gun for purposes of certain identification, while relying largely upon the field-glass for most of his work. One feels sure that he is not being led astray in these pleasant rambles through Birdland.

Amateur Sportsman, The, Vol. XXVII., Nos. 3, 4, 5.

American Monthly Microscopical Journal, The, Vol. XXIII., Nos. 5, 6.

American Ornithology, Vol. II., No. 6.

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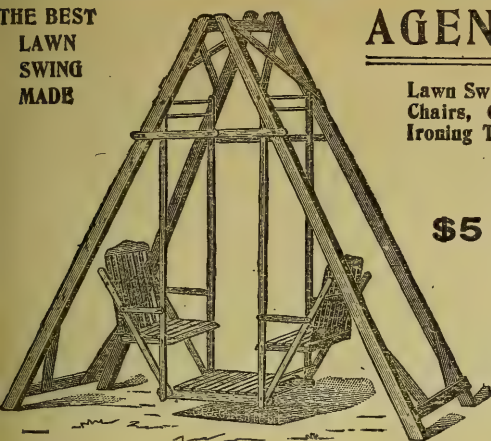
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CONTENTS.

	PAGE
The Cuban Tody (<i>Todus multicolor</i>). JOHN W. DANIEL, JR.	113
Among the Vultures in Asia Minor. H. C. TRACY.	116
Some Bluebird Boxes and Troubles. FRANK BRUEN.	121
My Summer Boarders. Season 1902. WM. J. MILLS.	124
All Day With the Birds. LYNDY JONES.	125
Winter Birds. LYNDY JONES.	129
An Addition to the Birds of Middle Southern Ohio.	133
W. F. HENNINGER.	133
A New Year Horizon For All. LYNDY JONES.	133
A New Bird For Ohio. REV. W. F. HENNINGER.	134
Editorial.	135
Election of Officers for 1903.	137
General Notes—	
Notes from Southern Ohio.	137
A few Wayne County (Mich.) Notes.	138
Notes from Pennsylvania.	138
Notes from Iowa.	140
Correspondence.	140
Publications Received.	143

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THE CUBAN TODY (*Todus multicolor*)

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DECEMBER, 1902.

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THE CUBAN TODY (*Todus multicolor*).

JOHN W. DANIEL, JR.

ONE of the most interesting birds to be met with in Cuba is the Cuban Tody (*Todus multicolor*). A flycatching, kingfisher-like species, it leads the life of a Passerine bird, yet its relationships are not in keeping with its perching habits. It is an unusual bird in coloration, form, and habit. Flat mandibles and flycatching habits at one time caused the family to which it belongs to be classed with the Flycatchers, but its affinities are now recognized as with the Motmots and Kingfishers. Strange, quaint little birds that they are, the Todies in more than one sense are peculiar, in view of the fact that of all the birds of the West Indies, the family Todidae is the only one not occurring elsewhere, its six species being confined to the Greater Antilles, a separate species upon each island. While there are now no species upon the mainland which closely approach them in form, it is safe to surmise that there was, in earlier times, a mainland branch of the family which has long since perished in the rigor of the continental struggle for existence while the insular species have survived under more favorable conditions of habitat.

Throughout Cuba the Tody is an abundant species.

Its favorite haunts are the low bushes covering the hillsides and the tropical growth fringing the small streams of the ravines and valleys. Its characteristic note, a lively little whistle, readily betrays its presence; but its small size, listless habits, and protective colors, make it inconspicuous amongst the luxuriant plant life of its home.

During the course of a several month's stay in Matanzas province, in the winter and spring of 1889, I had the good fortune to frequently observe this curious little bird.

To the west of Matanzas bay, beyond the rough limestone hills which rise from its western shore, there stretches the broad and verdant valley of the Yumuri. Dotted with palms and clothed in rich vegetation, it is a vale of tropic beauty perhaps unsurpassed in all Cuba. Low hills rise gently around it and, in the ravines between them in some places, small streams, their margins a profusion of plant life, trickle over rocks, fall in miniature cascades, and course down to the plain below. One day in February, as I followed one of these little streams in search of birds, working my way through the rank vegetation bordering it, I ran across the Tody for the first time. A sudden little whistle, rapidly repeated, came from the thick foliage of a bush close at hand. There was no accompanying movement amongst the leaves, and for some time I stood watching closely in hope of making out the author of the note, supposing that it was a bird of some size, proportionate to its voice. Close scrutiny did not reveal it, however, and I struck the bush with my gun barrel, when there was a quick whirring noise, and out darted a tiny, brilliantly colored bird about the size of a Winter Wren, and dropped to a twig a few feet away, where it sat bobbing its head up and down. With its queer, stocky little body raised to an upright attitude, its bill pointing vertically, it soon became rigidly motionless, and thus remained for some time as if asleep. It was surprisingly tame, not taking flight until I came so close that I could almost touch it, and then flying a few feet to another bush from which it

made no effort to move until I again closely approached it. Sitting listlessly on a twig, while I stood a few feet away, it now and then suddenly darted out after insects, catching them with a quick snapping of its bill and returning to its perch to swallow them, each such effort being accompanied by a peculiar whirring sound made by its wings and a hummingbird-like twitter. In swallowing the insects it seemed to have a good deal of difficulty, working its head up and down in the effort. The agility with which it pursued an insect, the suddenness and quickness of the sally, was very much in contrast with the air of stupidity it assumed while at rest, showing that in spite of its apparent laziness it was nevertheless on the alert for its prey.

The tameness shown by this first Tody met with was not exceptional, the various individuals met later showing the same indifference. It is characteristic of the species and a feature of disposition evidently not inherited from its relatives, those wary birds, the kingfishers. In form, the Tody strongly suggests a small kingfisher. It is a little under four inches long, its body short and stocky, its head large in proportion to its body, mandibles long and flattened, and its feet small and delicate. An unusual bird in form, especially in view of its size, its plumage is even more striking. Its throat is bright crimson, the feathers tipped faintly with white; breast and abdomen dull white or ashy; flanks pale pink; crissum yellowish green; lores yellow; auriculars blue; under surface of wings and tail light brown; and the crown, back, and upper surface of the wings and tail bright grass green.

While in the majority of cases, I found the birds in pairs, it was apparently too early for them to be breeding, and I did not find the nest. It is in regard to its nesting habits that shows conclusively its relationship to the kingfishers, excavating holes in banks as it does, and laying white eggs.

The lack of fear displayed by the Tody may be somewhat due to the bird's reliance upon its protective colors to

escape notice. Its usual upright attitude as it sits motionless midst the green leaves of a tropical bush put to the best protective advantage the uniform green of its upper parts while the pointing of the bill vertically may be the result of protective impulse, as shown in the case of the Least Bittern (*Ardetta exilis*).

The Tody is an example of the many curious forms of bird life which, combining bright plumage with strange form and habits, make the tropics such an ornithological wonderland.

AMONG THE VULTURES IN ASIA MINOR.

BY H. C. TRACY.

THE same varieties of the vultures occurring in Southern Europe, from Spain to Greece, and on the opposite shores of the Mediterranean, are met with in Asia Minor, where they are common enough to attract the attention of the travelers, although not so numerous as the hosts of them seen in some parts of Egypt.

The little Egyptian Vulture (*Neophron percnopterus*), corresponding to the American Turkey Vulture, is common in the vicinity of Turkish towns, but seldom so domestic a street scavenger as to deserve the name of "Pharaoh's Chicken," as the species is familiarly called.

The bird from whom our ideas of the vulture tribe are usually taken is the Tawny Vulture (*Gyps fulvus*), otherwise Gryphon, or Griffin Vulture, equally well named the Goose Vulture, from the general proportions of the long neck, evenly merging head and small eyes. The Tawny Vulture is by far the commonest, and composes the greater part of the flock gathered about any large carrion on the plain.

A far less common species is the Black Vulture, for which scientific terminology has found the fitting name of *Vultur monachus*; the distinctly marked patch of down on the

back of the head, contrasting with a neck as smooth as if it had been shaved, reminds one of the tonsure of a monk, while the large head and eyes, as well as the upright carriage of the bird, give it a dignity that marks it as superior to the common species. In its habits, too, the Monk Vulture is more secluded than the gregarious Gryphon.

The only remaining variety that a traveler in Asia Minor may expect to see is the Bearded Vulture (*Gypætus barbatus*), the famous Lämmergeyer of Switzerland. But aside from the authority of the naturalists, according to which this bird is not a true vulture, even a slight acquaintance with its striking and attractive qualities must insure it a distinct place in the mind of an observer, a place which it has long held in the popular imagination. Yet this bird of Alpine summits and abysses, and of romantic courage and fierceness, may often be seen in tame environments and under prosaic conditions. But wherever seen, its fine form, handsome plumage and spirited eye compel our admiration, and we call it a noble bird.

In traveling through any vulture district one must be content as a rule to watch the birds at a distance, in their soaring flight, an exhibition of organic mechanism well worth studying. But to make a closer acquaintance one must take time for stalking, baiting, and ambush.

With something left of the youthful eagerness with which I used to set out on a vain hunt for the big game of the upper air, I started up the mountain one clear morning two summers ago, with the intention of decoying and securing a specimen of one of the larger vultures. Instead of the antiquated shot-gun, on which my boyish endeavors had to rely, I was equipped with a forty-four caliber Winchester repeating rifle, which formidable destroyer, be it remembered, could only enter the country of the Turk when brought personally by an American consul—a favor done for us by Consul Jewett, of Sivas.

The occasion of the vulture hunt was the demand for specimens to be set up in the new but promising attempt at

a museum in Anatolia College at Marsovan. In order to make the most of the affair I had begun on a previous trial with an experiment in imitation of the one used by Audubon long ago, to shed light on the question of how vultures find the carcass of an animal, whether by sight or by scent. Using the stuffed skin of a deer Audubon succeeded in completely deceiving one American Turkey Vulture so that it had to try at the dry hide repeatedly before becoming convinced that the deer was a hoax. The test was completed by concealing the body of a hog in the field, and finding it undiscovered by the birds after days of putrefaction, the covering of dry grasses having been no hindrance to the spread of the odor. Using the skin of a small roe deer, I waited in vain in ambush for the approach of any carrion bird; but when the same skin was left out a day with the intestines of a sheep used to fill the abdomen, there were evidences of an experimental visit of some large bird. But when in place of the deerskin was put an equivalent amount of fresh meat, there was a hungry vulture on hand before long to make a meal of it. This being a full sized Tawny Vulture was secured without ceremony. The experiment so far indicated that the great Asiatic vultures depend on sight for finding their food, and, as is perfectly natural, can more quickly distinguish the red signal of flesh without its covering of skin and hair.

It was after this first acquisition of a big bird had been laboriously sponged over, skinned and treated, that the more interesting ambush followed that I am to describe.

It was not to be supposed that the vulture is an early bird; so it was not till nine o'clock that I reached the spot chosen for the morning's work: a small cave in a ledge of rocks, the entrance having been screened the day before with fresh oak branches corresponding with the stunted scrub oak that springs from the clefts of rock. There came to this spot two men and a donkey, there departed one man and a donkey minus its load of buffalo meat; but birds cannot count, and none noticed the discrepancy. Soon the sham

carcass, composed of a leg, a side and shoulder deposited thirty or forty yards from the cave, was covered with chattering magpies, whose immaculate plumage and reflections of blue and green belie their sordid tastes. For one hour they banqueted noisily, when they were disturbed by the arrival of a guest several sizes larger than themselves, who then took undisturbed possession of the feast. It was the Egyptian Vulture, a white bird with black wings and yellow bill and feet, that can with some consistency be called Pharaoh's Chicken, as far as its size and appearance are concerned; for although its wings spread six feet, its body is not much larger than that of a large fowl, and its neck is neither so long nor so bare as that of the large vultures; in fact, only the head lacks feathers. This visitor was a most propitious guest for my purpose, as his presence would seem to the birds of the upper regions an assurance of safety and hasten their coming.

I was destined to undergo some suspense, however, before my dinner party was complete. A bird of magnificent breadth of wing was circling around the place, in every near-
ing of his course making me puzzle over his identity and especially as to the peculiar formation of his beak which, indistinctly seen as he flew, appeared double, and only when I came to know the bird better, proved to be the beard of the Bearded Vulture, or, as we prefer to call him, the Lämmergeier, the bird having the largest length and breadth measurements of all the birds of Europe and Asia. At intervals this bird emitted a curious buzzing sound, the only sound which I have heard uttered by the Lämmergeier. But before he had fully determined to alight, things took a more decisive turn. There was a rush of wind that made my heart beat faster as the gaunt watchers descended from their height, one after another in quick succession till the quiet scene of the past hour was suddenly transformed to one of confusion, the carnival of the Harpies gorging on the booty or with striking wings and clattering bills disputing possession of a morsel. The scene was complete when the

Lämmergeier alighted on a rock near by to watch the performance, in whose gluttony he had no need to share, and when a single Black Vulture, or Monk Vulture, as we might well call him, after the example of the Germans, had descended among the group of tawny gourmands, and then, as behooves a member of a clerical order, stepped aside and turned his dignified back on the vulgar crowd. But for the rifle in my hand I might have waited indefinitely, absorbed in this strange sight; the rifle reminded me of my purpose, which was to get possession of the black gown of this same monkish guest, the victim of my treachery. I was excited. I raised the rifle, looked along its shaking barrel, and lowered it, experiencing emotions which are more novel, and perhaps better worth while than those of an experienced hunter. After partly succeeding in quieting the absurd trembling of that gun barrel, I fired. The black target rose into the air; the smoke obscured it for a moment, and I rushed out and fired wild shots at the retreating forms of the birds till they were out of range. Then, glancing down the mountain side I saw a mass of black prone on the ground. It was the Monk Vulture who had flown ten yards only to fall dead, with the great arteries severed at the heart. His length was three feet and eight inches, and his spread of wings from tip to tip nine feet and eight inches. These measurements are a little more than those of the Tawny Vulture, and a little less than those of the Lämmergeier.

Thus ended the morning among the vultures. I can only regret that I shall never know how the feast would have ended, and what part the Bearded Vulture and the Monk Vulture would have played, if I had left the Winchester at home.

SOME BLUEBIRD BOXES AND TROUBLES.

BY FRANK BRUEN.

THE writer saw a statement somewhere, that Bluebirds would build in a swinging box, but the English Sparrow would not. Thinking this statement important, if true, and wishing to see the Bluebirds more plentiful about town, he determined to test the matter by putting up a swinging box in his back yard.

A box of ordinary boards was made (some eight inches cube) and suspended from an arm nailed to the clothes pole, that being the nearest approach to a tree back of the brick block. The arm was 4 or 5 feet long and shaved to a sharp edge on top as a defense against the numerous cats thereabouts. The hole, an inch and a half in diameter, was placed well towards the top, and a wire nail below the hole made a good perch.

I made no record of the date the box was placed, but know it was in March when the Bluebirds came in force. A reference to my note book gives March 14th as the first day any considerable number were seen—two weeks after the first arrivals.

A pair of Bluebirds found the box in a day or two and tried to get in, seeming to care little for the swinging motion. It was soon plain that the hole was too small (it had been made one and a fourth inch first) so this was enlarged to one and a half inch strong, the Bluebirds finding no trouble then to enter.

They were in no hurry to begin active operations, but inspected the box very often and staid near by for perhaps a week, before begining to build. Then the English Sparrows began to be interested in the box and would carry in stuff when the Bluebirds were out of sight. The Bluebirds worked some now and drove the Sparrows away whenever they saw them. The Sparrows were very persevering, however, and worked every chance they had.

This exploded the idea that the sparrows were afraid of the swinging motion. Knowing the Bluebirds would be worried into leaving in time, I placed a trigger over the hole and carried a string to the house and waited for a sparrow to go in. This happened very soon and a sharp pull made him a prisoner. In taking the box down to dispose of the pest, I accidentally hit the trigger and the sparrow was out in a second. The sparrow is a wise bird, and one lesson was enough for him. I had no chance to catch another.

I cleaned out the box, but fear it was a mistake, for the nest foundation was most of it the work of the Bluebirds. The male Bluebird saw me catch the sparrow, but was in the box two minutes after I hung it up again.

At this time my neighbor put up a nice little fixed box and the fickle Bluebirds left my homely box and took possession of his. But the sparrows who had just been deprived of a fine bird box near by, came in force and my neighbor laid for them with an air gun and succeeded in killing one after which the Bluebirds became firmly installed.

May 15th the parent birds began feeding the young and May 31st took out their brood of five.

A very few moments after the birds left the sparrows were fighting for the box and my neighbor made a trap of it and caught and killed seven cock sparrows all belonging to a band of freebooters who seemed to have no family ties. June 3rd the Bluebirds were back for a time with four of the young, and about this time a pair of House Wrens, that had been nesting near by, came along and wanted the box. She or he or both in turn began "firing" the old nest material out in a very vigorous manner, but left when the Bluebirds appeared. The Bluebirds did not go in, but evidently wanted the box. My neighbor then cleaned the box out and the Bluebirds were in possession very soon, while the wrens took another box which my neighbor put up in a white oak on his place.

The Bluebirds—the female being the only one in evidence most of the time—finished the nest, laid a second set of

eggs, and they were nearly incubated when the female abandoned the nest and after a few days disappeared. My neighbor took the box down soon afterwards and found no eggs. Here was a mystery, for he knew the bird had been incubating a set of eggs and knew they could not yet have hatched. The mystery was cleared up by a similar case.

My bird chum had put up boxes in his large yard and one was occupied by a family of wrens and two others by sparrows whom he systematically robbed as soon as a new set of eggs was laid. He moved a sparrow box and hung it on the fence temporarily when a pair of Bluebirds came along and took possession and laid a set of eggs. The box was moved to a tree to get it away from cats. The set of four eggs were almost ready to hatch when all disappeared but one and that was pierced. Of course we declared at once that the "British" had done it and declared war. We went to the box and found the other eggs under it, almost fully incubated—pierced. My friend put a set of sparrow's eggs in the nest and the next day they were gone. This rather non-plussed us, but another set was put in, and the wren was caught in the act of disposing of them. This was a hard blow to us, with whom Jenny had always been a favorite, and who had occupied our boxes from year to year.

It was remembered then that the Bluebird had come out to drive away the wren who had stolen up to the box several times. A search at my neighbor's box also revealed the pierced eggs near by.

To conclude: It is my opinion that House Wrens and Bluebirds should not be accommodated with homes very near each other; that Bluebirds need help to become established; that a box may be "hoodooed" for sparrows by keeping one a prisoner, a short time, in it.

I hope others will try the swinging box with no near neighbors. They should be put up by March 15 or 20, for I found a brood of Bluebirds out and flying May 8, this year.

Bristol, Conn.

MY SUMMER BOARDERS. SEASON 1902.

BY WM. J. MILLS.

MY feathered boarders this season have been rather more numerous, (but none the less interesting) than has been the case in the past. My back and front yards cover 16 acres, with about 600 yards of good spring branch and several wooded knolls and glens. Five pairs of Wood Thrushes built their nests near the branch and all five families raised their brood of four each without mishap. Three pairs of Catbirds prepared to go to housekeeping but were less fortunate; their eggs being taken in an effort to minimize the annual toll exacted of my cherry trees. A pair of Scarlet Tanagers built a beautiful nest in the top of a peach tree. The set of four eggs were taken because the tanagers do considerable damage to my crop of grapes, and I didn't have a set of Scarlet Tanager eggs, so couldn't resist the temptation to add a set to my collection. A pair of Summer Tanagers built in an oak coppice close to the house, from which I secured a set of three eggs on June 8th. The vireos were here in a flock; no less than four pairs of "Red-eyes" rearing broods successfully, with the addition of three pairs of other and unidentified species of vireo. The Carolina Wren was not so numerous as usual. I have had as many as four pairs with young in different situations in the barn and other outbuildings, but this season I noted only one nest in an old paint bucket in my workshop and another in the woods in a hollow stump five feet from the ground. The aforesaid paint bucket was occupied through the winter by a pair of flying squirrels, and a pair of youngsters first saw the light therein early in February. Judging from the actions of the bird, what was taken to be a Black and white Warbler's nest (built in a small azalea bush, a foot from the ground) proved non-productive, probably on account of my approaching too closely to the nest. One pair of Indigo Buntings raised a trio of youngsters; Cardinal ditto. The

Blue-gray Gnatcatcher had a nest in a black gum. This same gum has held one nest, occasionally two, every year for the last seven years. A sparrow, not identified, built in a white oak on a horizontal limb fourteen feet from the ground and raised a set of three, while ten feet higher was a nest of a flycatcher, also unidentified, which raised a family of three.

East Point, Georgia.

ALL DAY WITH THE BIRDS. May 7, 1902.

THERE is a fascination about the quest for the largest list of birds in a day which is not equalled even by the search for new species in a region which one has worked for years. The limits of time, strength, and territory possible to cover furnish the incentive for a sort of field study which is wholly out of accord with any accepted method. One cannot tarry long in any place and wait for the birds to come to him; he must search out the birds. Nor will time permit him to study the individuals without sacrificing the purpose of the day's work. A species once recorded must be put aside as finished for the day and the quest for those not yet seen carried forward vigorously. It may very well be true that this nervous activity which forbids the usual method of field work—the calm waiting for the birds to appear—makes us overlook some species; but if so, it certainly discovers to us many that would not be likely to come within our ken. It is an exhausting work, both on account of the length of the day and the energy which must be thrown into it. One may well pause to ask if it pays, or if the results justify the outlay. We think they do. One of the questions most frequently asked the writer is, "How many birds can you see in a day?", by persons who have a genuine interest in the birds and want to know what are the possibilities of a single day's study. It is a question that should have a fairly accurate answer

from as many different standpoints as possible for the education and encouragement of the questioner. This 'All Day with the Birds' habit grew out of the effort to give a fair answer to this question.

In northern Ohio (perhaps I should say in Lorain county) in winter an hour's tramp through fields and woods should result in a record of about a dozen species. As the season advances and the birds return, this number would be increase until by the last week in March one should find more than twice that number, under favorable conditions 40 species. When the migrations are at their height in early May, the probabilities are increased to 80 or even more, for a few hours in the fields and woods. This is a record for the average bird student with average facilities and a few hours at most at his disposal. Taking, now, the more than average in all respects, what may be accomplished? In other words, what are the actual conditions of the bird world in a given locality during the height of the spring migrations on any given day? The question as to what the average person may be able to record under average conditions involves little more than the commoner species, or those which are more readily seen, leaving almost wholly out of the account many species which are either few in numbers or more difficult to find on account of fewer numbers or secretive habits. The more careful study sets over against the apparent conditions the actual conditions.

The participants in this "All Day" were Rev. W. L. Dawson, who came up from his Columbus home for this special purpose, Mr. Benj. T. Gault, who, as good fortune would have it, was able to stop over during that day on his way from the East, and the writer. We worked together, and as the sequel proved, three pairs of eyes are better than two, for probably several species would have been overlooked with any one of the three not there. There is no doubt in my own mind that a larger list could be secured if three persons should work independently, each being as-

signed to some region where certain species are found, working up that part of the list with great care. But by such a method the possibilities for errors would be greatly increased. With two or more working side by side the record must satisfy all in order to be counted.

The day was not an ideal one viewed from any standpoint. At the start at 3:30 A. M. the temperature was 54° and did not go above 65° during the day. A brisk west-south-west wind so roughened the lake that no ducks appeared upon its surface, while the sky threatened rain several times, with almost no clearing until late in the day. The weather had been so wet on the two preceeding days that wheeling was not considered advisable. Accordingly the morning was spent in the South Woods, a mile south of Oberlin. Before we had left the confines of the village Pine Siskins and a hoary old Osprey gave us hopes of the greatest record yet made. These two species are rarely seen at this time of year with us.

It is significant that before leaving Oberlin at 9 o'clock our record had almost reached 90 species, in spite of the lowering heavens and chill air. An hour spent in the Black River gorge below Elyria added but three species to the list, two of which were not seen elsewhere during the day. We were obliged to waste an hour in the marsh at Lorain before taking the 12:30 car for Oak Point. To be sure a visit to the lake front added two species and the marsh one, but these would have been seen elsewhere with less expenditure of time and effort.

At Oak Point not more than seven species were added in three hours of pretty hard work. With only four water-birds, five swamp-birds and but three shore-birds the outlook was certainly gloomy. Had the lake been quiet and the air warmer there is no question but in these three groups there would have been at least double the numbers recorded.

Leaving Oak Point for the three mile walk to North Amherst to catch the 5:40 car for Elyria proved not so bad

an arrangement, since three species were added to our list. From the car window two others were noted, and the day's work was done. A reckoning made the list number 113 species, which is one better than our best. While it is gratifying to make a new record, the day's work was far from satisfying, because there were not less than 20 species which ought to have been recorded and which were recorded during the next four days. The reason for the large list in spite of adverse conditions, lies in the type of season and conditions of weather during the preceeding three weeks. In no spring since my residence in Ohio has there been such a quick succession of cold and warm waves, the one retarding the northward movements, the other making the impatient birds push northward only to be checked and held from complete migration. Lagging individuals of species whose bulk had days before gone north were still here, while almost all of the late migrants had appeared. Taken altogether it has been a phenomenal season for the migrations of the birds. We can only regret that time and strength were not sufficient to search out the many species here but unrecorded.

Pied-billed Grebe.
Herring Gull.
Common Tern.
Wood Duck.
Least Bittern.
Great Blue Heron.
Green Heron.
Sora.
Virginia Rail.
Bartramian Sandpiper.
Spotted Sandpiper.
Kildeer.
Bob-white.
Mourning Dove.
Red-shouldered Hawk.
Broad-winged Hawk.
Bald Eagle.
American Osprey.
Sparrow Hawk.
Belted Kingfisher.
Yellow-billed Cuckoo.
Hairy Woodpecker.
Downy Woodpecker.
Red-headed Woodpecker.

Flicker.
Chimney Swift.
Ruby-throated Hummingbird.
Kingbird.
Crested Flycatcher.
Phoebe.
Wood Pewee.
Traill Flycatcher.
Green-crested Flycatcher
Least Flycatcher.
Prairie Horned Lark.
American Crow.
Blue Jay.
Bobolink.
Cowbird.
Red-winged Blackbird.
Meadowlark.
Orchard Oriole.
Baltimore Oriole.
Rusty Blackbird.
Bronzed Grackle.
American Goldfinch.
Pine Siskin.
Vesper Sparrow.

Grasshopper Sparrow.
 White-crowned Sparrow.
 White-throated Sparrow.
 Chipping Sparrow.
 Field Sparrow.
 Song Sparrow.
 Swamp Sparrow.
 Towhee.
 Cardinal.
 Rose-breasted Grosbeak.
 Indigo Bunting.
 Scarlet Tanager.
 Purple Martin.
 Cliff Swallow.
 Barn Swallow.
 Tree Swallow.
 Rough-winged Swallow.
 Bank Swallow.
 Migrant Shrike.
 Red-eyed Vireo.
 Warbling Vireo.
 Yellow-throated Vireo.
 Blue-headed Vireo.
 Nashville Warbler.
 Golden-winged Warbler.
 Black and white Warbler.
 Blue-winged Warbler.
 Tennessee Warbler.
 Yellow Warbler.
 Black-throated Blue Warbler.
 Myrtle Warbler.
 Magnolia Warbler.
 Chestnut-sided Warbler.

Cerulean Warbler.
 Bay-breasted Warbler.
 Blackburnian Warbler.
 Black-throated Green Warbler.
 Palm Warbler.
 Oven-bird.
 Water-Thrush.
 Louisiana Water-Thrush.
 Maryland Yellow-throat.
 Yellow-breasted Chat.
 Wilson Warbler.
 Canadian Warbler.
 American Redstart.
 American Pipit.
 Catbird.
 Brown Thrasher.
 House Wren.
 Winter Wren.
 Long-billed Marsh Wren.
 Brown Creeper.
 White-breasted Nuthatch.
 Red-breasted Nuthatch.
 Tufted Titmouse.
 Chickadee.
 Ruby-crowned Kinglet.
 Blue-gray Gnatcatcher.
 Wood Thrush.
 Wilson Thrush.
 Olive-backed Thrush.
 Gray-cheeked Thrush.
 Robin.
 Bluebird.

WINTER BIRDS.

BY LYNDS JONES.

The latitudinal variation in the range of many species of birds in winter is one of the problems which nothing but careful and persistent field work will solve. Sufficient interest attaches to the study to make the effort of determining what birds are about us in winter well worth the while. Bird studies in winter are not so hedged about with difficulties and inconveniences as study in August, because then dense foliage, excessive heat, insects and the timidity of the birds combine to thwart the purposes of the bird student. In winter there is only the cold and snow, which should not be serious hindrances to a healthy body.

WINTER BIRDS OF SCIOTO AND PIKE COUNTIES, OHIO.

For the sake of comparison with a study of the winter birds in Lorain county, this list is given for the extreme southern part of Ohio, almost directly south of Lorain county. The comparison brings out many interesting questions. It is well known that the southern part of the state experiences lower temperatures than the northern, during some part of the winter, but it also has less snow and a shorter time during which the food of the birds is covered. This would be reason enough why many of the birds which are not found in the northern counties during the winter find the southern counties fairly comfortable winter quarters. Rev. W. F. Henninger contributes this list:

SPECIES WHICH ARE RESIDENT, 42.

- Pied-billed Grebe, *Podilymbus podiceps*. Fairly common.
 Mallard, *Anas boschas*. Common.
 Killdeer, *Ægialitis vocifera*. Very common.
 Bob-white, *Colinus virginianus*. Very common.
 Ruffed Grouse, *Bonasa umbellus*. Common.
 Mourning Dove, *Zenaidura macroura*. Very common.
 Turkey Vulture, *Cathartes aura*. Common.
 Cooper Hawk, *Accipiter cooperi*. Common.
 Sharp-shinned Hawk, *Accipiter velox*. Not common.
 Red-tailed Hawk, *Buteo borealis*. Common.
 Red-shouldered Hawk, *Buteo lineatus*. Not common.
 Am. Sparrow Hawk, *Falco sparverius*. Very common.
 Barn Owl, *Strix pratincola*. Common.
 Long-eared Owl, *Asio wilsonianus*. Rare.
 Barred Owl, *Syrnium nebulosum*. Common.
 Screech Owl, *Megascops asio*. Very common.
 Great Horned Owl, *Bubo virginianus*. Common.
 Belted Kingfisher, *Ceryle alcyon*. Fairly common.
 Hairy Woodpecker, *Dryobates villosus*. Fairly common.
 Downy Woodpecker, *Drobates pubescens medianus*. Common.
 Northern Pileated Woodpecker, *Ceophlœus pileatus abieticola*.
 Rather rare.
 Red-bellied Woodpecker, *Melanerpes carolinus*. Common.
 Northern Flicker, *Colaptes auratus luteus*. Common.
 Prairie Horned Lark, *Otocorys alpestris praticola*. Common.
 Blue Jay, *Cyanocitta cristata*. Not common.
 American Crow, *Corvus americanus*. Common.
 Meadowlark, *Sturnella magna*. Common.
 American Goldfinch, *Astragalinus tristis*. Common.
 Chipping Sparrow, *Spizella socialis* (at times). Common.
 Song Sparrow, *Melospiza melodia*. Common.
 Towhee, *Pipilo erythrophthalmus*. Males only. Common.
 Cardinal, *Cardinalis cardinalis*. Very common.
 Cedar Waxwing, *Ampelis cedrorum*. Common.
 Migrant Shrike, *Lanius ludovicianus migrans*. Fairly common.

Winter Birds.

131

Carolina Wren, *Thryothorus ludovicianus*. Common.
Bewick Wren, *Thryomanes bewickii*. Common.
Chickadee, *Parus atricapillus*. Common.
White-breasted Nuthatch, *Sitta carolinensis*. Common.
Tufted Titmouse, *Parus bicolor*. Common.
Carolina Chickadee, *Parus carolinensis*. Not common.
American Robin, *Merula migratoria*. Common.
Bluebird, *Sialia sialis*. Common.

WINTER RESIDENTS ONLY, 10.

Marsh Hawk, *Circus hudsonius*. Common.
Am. Rough-legged Hawk, *Archibuteo lagopus sancti-johannis*.
Rather rare.
Bald Eagle, *Haliaeetus leucocephalus*. Rather rare.
Osprey, *Pandion haliaetus carolinensis*. Fairly common.
Short-eared Owl, *Asio accipitrinus*. Common.
Rusty Blackbird, *Scolecophagus carolinus*. Common.
White-throated Sparrow, *Zonotrichia albicollis*. Very common.
Tree Sparrow, *Spizella monticola*. Very common.
Slate-colored Junco, *Junco hyemalis*. Very common.
Northern Shrike, *Lanius borealis*. Rare.

RARE TRANSIENTS SOMETIMES SEEN IN JANUARY AND FEBRUARY, 8.

Herring Gull, *Larus argentatus*. Rare.
Red-breasted Merganser, *Merganser serrator*. One record only.
Golden Eagle, *Aquila chrysaetos*. Very rare.
Snowy Owl, *Nyctea nyctea*. Very rare.
Saw-whet Owl, *Nyctala acadica*. Rare.
Purple Finch, *Carpodacus purpureus*. One record.
Redpoll, *Acanthis linaria*. Very rare.
Brown Creeper, *Certhia familiaris americana*. In extremely cold
winters only, but then common.

REGULAR TRANSIENT VISITORS SOMETIMES SEEN IN WINTER, 14.

Loon, *Gavia imber*. Rare.
American Merganser, *Merganser americana*. Common.
Black Duck, *Anas obscura*. Common.
Shoveller, *Spatula clypeata*. Rather rare.
Pintail, *Dafila acuta*. Very common.
American Golden-eye, *Clangula americana*. Rather rare.
Canada Goose, *Branta canadensis*. Very Common.
Wilson Snipe, *Gallinago delicata*. Generally stays all winter.
Great Blue Heron, *Ardea herodias*. Rather rare.
White-crowned Sparrow, *Zonotrichia leucophrys*. Common.
Winter Wren, *Olbiorchilus hyemalis*. Rather rare.
Red-breasted Nuthatch, *Sitta canadensis*. Very rare.
Golden-crowned Kinglet, *Regulus satrapa*. Common.
Ruby-crowned Kinglet, *Regulus calendula*. Rather rare.

ACCIDENTAL, 1.

Old-squaw, *Harelda hyemalis*.

INTRODUCED 2.

English Sparrow, *Passer domesticus*. Very common.

Mongolian Pheasant, *Phasianus torquatus*. Rare.

WINTER BIRDS OF BRISTOL, CONN., AND VICINITY.

The birds here listed were recorded between January 1st and February 28th, 1902. While a list for a single winter should not be compared with one covering several winters, except as it indicates what species are pretty likely to be found during any winter, and therefore compares only with the species regularly found in that other locality, it is nevertheless interesting to notice the correspondences and differences which localities so far separated in longitude as well as latitude, from each other as these show. Other conditions, particularly the presence of the ocean and the intervening mountains, tend to emphasize the difference. It is possible here to give the actual number of records for each species for the two months covered. The notes are contributed by Mr. Frank Bruen.

- Herring Gull, *Larus argentatus*. 9.
- Bob-white, *Colinus virginianus*. 50.
- Ruffed Grouse, *Bonasa umbellus*. 7.
- American Sparrow Hawk, *Falco sparverius*. 1.
- Pigeon Hawk, *Falco columbarius*. 3.
- Belted Kingfisher, *Ceryle alcyon*. 2.
- Hairy Woodpecker, *Dryobates villosus*. 1.
- Downy Woodpecker, *Dryobates pubescens medianus*. 18.
- Blue Jay, *Cyanocitta cristata*. 13.
- Northern Flicker, *Colaptes auratus luteus*. 1.
- American Crow, *Corvus americanus*. 220.
- Pine Siskin, *Spinus pinus*. (Possible error.)
- American Goldfinch, *Astraglinus tristis*. 150.
- Snowflake, *Passerina nivalis*. 300.
- Slate-colored Junco, *Junco hyemalis*. 30.
- Tree Sparrow, *Spizella monticola*. 150.
- Song Sparrow, *Melospiza melodia*. 25.
- Northern Shrike, *Lanius borealis*. 3.
- Winter Wren, *Olbiorchilus hyemalis*. 2.
- Brown Creeper, *Certhia familiaris americana*. 3.
- White-breasted Nuthatch, *Sitta carolinensis*. 36.
- Chickadee, *Parus atricapillus*. 53.
- Golden-crowned Kinglet, *Regulus satrapa*. 12.
- American Robin, *Merula migratoria*. 1.

AN ADDITION TO THE BIRDS OF MIDDLE
SOUTHERN OHIO.BONAPARTE GULL (*Larus philadelphia*).

BY W. F. HENNINGER.

On December 4, 1902, I received in the flesh a ♂ in first winter plumage of Bonaparte Gull (*Larus philadelphia*), which had been winged on November 29, and died December 1, at Waverly, Ohio. It was shot along the canal (Potsmouth—Lake Erie). The bird was in fine condition and very fat. It measured: extent 82 ctm., wing 26.4 ctm., bill 27 mm., tail 10.3 ctm., length without bill 33 ctm., tarsus 35 mm. I had always considered Bonaparte Gull a migrant in Middle Southern Ohio, but this is the first authentic record for that region and an addition to my list.

A NEW YEAR HORIZON FOR ALL.

The editor is anxious to cross swords with every reader of this notice. It has been his habit to spend some time on the first day of each year studying the birds for the purpose of getting his note-book started when it should be. He proposes to continue this practice the coming year, and earnestly hopes that many others will do the same. He will offer the following inducement to any and all to begin bird study on that day: To any reader of this notice north of the 39th parallel, who secures a bona fide list of species of live wild birds (not including English Sparrows, pigeons, or other semi-domesticated species), actually seen between 6 a. m. and 6 p. m. on January 1, 1903, larger than he secures in Lorain county, Ohio, on the same day, he will give a year's subscription to this BULLETIN. The only condition being that the list must be mailed to the editor not later than January 3, 1903, and that each species recorded must be a free wild bird. The lists will be published in the BULLETIN and will be of interest and value to every reader.

A NEW BIRD FOR OHIO.

RED-LEGGED BLACK DUCK—(*Anas obscura rubripes*.)

BY REV. W. F. HENNINGER.

THE recent article of Mr. Wm. Brewster in the *Auk*, (Vol. XIX., April, 1902, pp. 183-188), and his foot-note that probably a large proportion of the autumn birds in the Mississippi Valley and about the Great Lakes belong to the form *rubripes* of the Black Duck, brought back to my memory the fact that I received on March 27, 1901, a very large Black Duck, in which I noticed the very bright red feet and yellow bill, and my notebook still contains the remark concerning this specimen, "tarsus red." On examining the dried skin the feet still show an orange color, the pileum and nape are typical *rubripes* and the spots on the throat and down the sides of the neck are almost typical *rubripes*. This shows up still more, when comparing the specimen, a male, with a typical specimen in my collection (shot March 25, 1899, sex unknown), but the head has a more grayish tinge, the throat almost an orange color.

No. 204 (coll. W. F. H.), March 25, 1899, typical *obscura*, measures: wing 24.3 cm., length without bill 52.5 cm., extent 78 cm.

No. 429 (coll. W. F. H.), ♀ March 8, 1901, the intermediate, measures: wing 25 cm., length without bill 53 cm., extent 87 cm.

No. 438 (coll. W. F. H.), March 27, 1901, ♂, typical *rubripes* measures: wing 28.5 cm., length without bill 55 cm., extent 94 cm.

Measurements taken in the flesh.

Mr. Brewster has given a very accurate description of this new subspecies, which is more common in Middle Southern Ohio in the spring than in the fall. All of these specimens were taken at Waverly, but I believe a careful investigation of the material in this state by Ohio ornithologists will prove *rubripes* to be found quite frequently almost anywhere.

THE WILSON BULLETIN.

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Official Organ of the Wilson Ornithological Chapter of the Agassiz
Association.*

Edited by LYND S JONES.

PUBLISHED BY THE CHAPTER, AT OBERLIN, OHIO.

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EDITORIAL.

The index for the present volume will be issued with the March, 1903, BULLETIN.

The present number of the Bulletin marks the close of its ninth volume since we began the present plan of publication. From a small beginning our official organ has come to fill a place in the study of our birds which we may well point to with pride. While the development has been slow it has been sure. As the work of our organization has developed papers of more than usual value have been published as a part of the regular series of Bulletins. These papers or studies along particular lines of work show what may be accomplished by combined efforts upon such phases of study as few if any of us might hope to compass alone. In the broader subjects of ecological studies there is a field for work of the highest value and interest which we can well consider. The systematic work is well cared for by those best fitted for it, and may be safely left to them in the main, while we develop the work of more immediate significance to the economic interests of the country. Some of these are such studies as the food habits, and closely associated with this the time during which the birds are present, and their numbers during that time. Food habits are known to differ, with many species, during different times of the year and under different conditions. Other more or less closely related subjects are the period of incubation and the period during which the young remain in the nest, and the time during which they are fed after

leaving the nest, the average number of eggs to the clutch and the average number of young reared. Little has been learned about the chief enemies of the most of our small birds, either during the nesting period or during the life of the birds. In the realm of psychology there is room for any and all. Good work can be done determining how best to restore confidence in us men and so increase the numbers of native birds about us. Finally, none of us can hope to do everything, nor many of us much, but each one will be certain to find something which his regular occupation makes possible and profitable, in the way of bird studies. If we can put ourselves to that one thing we shall be making contributions to our knowledge of the birds as truly as he who follows it as a profession. Put what you have learned into print for the sake of others.

Is there not some one among our active members who could undertake the study of some species or group of species over the whole of the country, with the co-operation of his fellow members and others, having in view a finished report for a special Bulletin? There is at present no one at work on such a problem. Some of our common birds make fine subjects for wide and careful study. Any other topic which may appeal to any person might well be pursued in the same manner. Each of us can be of great service both locally and in general by carefully working up a list of the birds of our own locality. The editor would be pleased to receive for publication several such local lists for the forthcoming volume of our Bulletin. They are both interesting and valuable, forming the basis for comparisons in contiguous as well as widely separated localities.

The March number of the BULLETIN will contain a list of all members of our organization, and will probably be accompanied by a copy of the Constitution and By-laws revised to date. Will all members, both Active and Associate, be careful to note the address on the envelope enclosing this number of the BULLETIN, and send any correction that may be necessary to the editor before February 15, 1903. The names of members who are more than six months in arrears for dues will not appear on this printed list.

The outlook for the BULLETIN and our work for 1903 grows brighter with the waning year. Unless all calculations fail we shall be able to secure one or more illustrations for each number. We feel warranted in saying that the present high standard of the BULLETIN will not only be maintained but that improvements will be made without increasing the subscription price, which is hardly more than nominal. If the interest of every member and every reader of the BULLETIN could find expression

in securing but one new member or but one new subscriber, we should become self-supporting at once. We can offer liberal terms to any who are willing to canvas for new subscribers. Write the editor for terms.

We are in the midst of the winter season again, when there is stagnation in bird study for the large majority of bird students. This ought not so to be. While the winter tramps will not yield so many species as at any other time of year, it will often result in more novel experiences and in learning more useful things about the birds than a whole summer's work will. Elsewhere in this number you will find a call for New Year horizons. Will you not consider this a personal matter and make sure of some outdoor study of the birds about you on the first day of the year 1903, to begin the year right?

We are pained to learn of the death of Mr. Chester Barlow, late editor of *The Condor*, on November 6, at Mountain View, Santa Clara county, California. His career as a bird student was marked by enthusiasm and accurate work. His loss will be a serious one to the Cooper Club.

ELECTION OF OFFICERS FOR 1903.

The election resulted in the selection of the following officers for 1903. A full statement of the election will appear in the Reports of Officers for 1903, to be issued with the March Bulletin.

President—Lynds Jones, Oberlin, Ohio.

Vice-President—N. Hollister, Delavan, Wis.

Secretary—John W. Daniel Jr., 3146 Q St., N. W. Washington, D. C.

Treasurer—Frank L. Burns, Berwyn, Penn.

Executive Council—

John H. Sage.

H. C. Oberholser.

W. E. Saunders.

GENERAL NOTES.

NOTES FROM SOUTHERN OHIO.—MOURNING DOVE (*Zenaidura macroura*). This is an abundant resident in Scioto county, even in the severest winters at sheltered places. It feeds mostly on corn and wheat, which have been scattered in the fields. These two grains form almost its whole food. Only during October have I observed weed seeds composing more than half of its food, yet the Mourning Dove is by no means injurious to crops. Observations based upon stomach and craw contents are not entirely reliable in regard to the food of birds, since some food is so quickly digested that it cannot be

satisfactorily traced; hence, these examinations must be supplemented by careful observations by reliable naturalists. The Mourning Dove nests as early as April 10, 1898, and as late as August 15, 1901, these being the dates on and between which fresh eggs were found. Frequently but one egg is laid. The nest is seldom higher than twenty feet, and frequently on the ground.

TURKEY VULTURE (*Cathartes aura*). This is common as a summer resident but not so common as a winter resident. An egg in the writer's collection taken on May 26, 1902, has a strong greenish ground color, and was heavily incubated. The nest was in the hollow top of an old sycamore along the Scioto river, at Waverly.

MARSH HAWK (*Circus hudsonius*). This hawk is fairly common all winter, but I have never seen it during the summer. It is confined to the bottom lands while here. It is a great catcher of birds. The farmers know why they call him "Quail Hawk." I have never shot one that was not after quail or small birds, even where there were plenty of mice.

COOPER HAWK (*Accipiter cooperi*). Common all the year. This is the greatest robber of the barn-yard, always hungry and ready to kill. To quote an example: on October 18, 1898, a female was shot while in the act of pouncing down on a chicken. In its stomach and craw were found remnants of a young chicken, the head of a Bob-white, and parts of a Tufted Titmouse, with all of which it was literally stuffed.

RED-TAILED HAWK (*Buteo borealis*). During the last three years I have skinned and mounted some twenty Red-tails, and every one of them, whose stomach was not empty, had in its craw or stomach or both, remnants of chicken, Bob-white, or squirrel, but never the least sign of a mouse.

RED-SHOULDERED HAWK (*Buteo lineatus*). Unlike the Red-tail and Marsh Hawks, the Red-shouldered is a great mouse killer, and should be fully protected. A specimen shot February 1, 1901, had two mice in its craw and three in its stomach.

NORTHERN FLICKER (*Colaptes auratus luteus*). A male shot September 26, 1894, at South Webster, Scioto county, had in its bill and craw each one acorn, and five in its intestines. Another shot October 8, 1894, at the same place had six dogwood berries in its intestines and six in its gizzard.

BLUE JAY (*Cyanocitta cristata*). On May 9, 1896, I saw a Blue Jay destroying the nest and eggs of a Chipping Sparrow in the garden of the parsonage at South Webster. I did not see it suck the eggs.

REV. W. F. HENNINGER.

A FEW WAYNE COUNTY (MICH.) NOTES, 1902.—**SAW-WHET OWL** (*Nyctala acadica*). Several of these little owls have been taken during the past year—two from Grosse Point, on December 26 and January 29, and one October 26, which was shot in the heart of Detroit. Mr. Norman A. Wood informs me that several were brought in during the past winter at Ann Arbor.

SNOWY OWL (*Nyctea nyctea*). During the past winter more of these birds were brought in to the local taxidermist than I have record of for many years. Several were shot at the St. Clair Flats, and from the surrounding counties of Macomb and Oakland. Numbers of these birds seem to have been taken all over the East during the past winter, and certainly they were more abundant in Southern Michigan than in many seasons.

CARDINAL (*Cardinalis cardinalis*). I have but few records of this bird here, but added three this year—one male on January 26, and a male and female on February 22, at Bell Isle. During the winter of 1900-01 a brilliant male hung around our orchard in the heart of the city, and I saw him almost every day. Mr. J. Claire Wood shot a male December 9, 1899, and a female in November, 1897.

SNOWFLAKE (*Passerina nivalis*). More abundant than I have observed them to be in several years. I saw my first arrivals this fall, October 31, at the Flats, flying over the reeds. These were unusually tame and unsuspicious.

TURKEY VULTURE (*Cathartes aura*). A number seen this year; the first April 13, and the last was shot in late October.

LINCOLN SPARROW (*Melospiza lincolni*). J. Claire Wood shot a male of this species October 1, 1900, which is, as far as I know, the first record for Wayne county.

RED-BELLIED WOODPECKER (*Melanerpes carolina*). A rather rare migrant here. I saw several on April 29 and early May, and several were shot during October. According to my notes this bird was more abundant in former years.

WHITE-WINGED SCOTER (*Oidemia deglandi*). While at the north channel of the Flats I saw a mounted specimen of this bird which was shot by H. Avery about two years ago. The local hunters have never seen it.

HUDSONIAN CURLEW (*Numenius hudsonicus*). On May 25, a flock of perhaps 200 curlews circled over our boat, and Mr. C. H. Allis shot one from the flock, but they were wild and wary. A rare migrant.

GRASSHOPPER SPARROW (*Ammodramus savannarum passerinus*). Mr. J. Claire Wood added this species to our local breeding list on May 28, by taking a set of four and both birds. Perhaps it is more abundant than supposed and overlooked because of its retiring habits.

AMERICAN WHITE PELICAN (*Pelecanus erythrorhynchos*). A bird of this species was shot by a fisherman, E. Harmont, about July 30, near the mouth of the Detroit, and has been mounted and placed in the show windows of H. W. Becker, a local furrier here.

BLUE-WINGED WARBLER (*Helminthophila pinus*). I have never observed this bird here, but J. C. Wood saw a pair May 29.

PIGEON HAWK (*Falco columbarius*). A rare migrant. Mr. C. H. Allis shot a pair October 28, 1900. I have a fine female shot September 13, 1890, while flying over the Detroit river.

SHORT-EARED OWL (*Asio accipitrinus*). This bird has been abundant during the fall of 1901 and winter of 1901-02. One was shot out of a flock of 40 on February 14, by a farmer on Grosse Point, which hung closely to the meadow grass.

MOURNING DOVE (*Zenaidura macroura*). A number spent the winter here. The past few years have witnessed a great change in the habits of several of our summer residents, and now a number of Mourning Doves, Flickers, Song Sparrows, Meadowlarks, Red-headed Woodpeckers, Sparrow and Red-shoulder Hawks, remain throughout the year.

BRADSHAW H. SWALES.

Detroit, Mich.

SIX GENERATIONS OF PHOEBE'S NESTS.—This summer (June 15, 1902) a Phoebe's (*Sayornis phoebe*) nest was found with a full

complement of eggs nearly pipped. The nest was located under the shelter of the roof of a small porch adjoining a deserted fruit house. The nest was at one end of the porch, and running to the other end were the other five nests in varying stages of preservation according to age, the one at the other end being the oldest and represented only by fragments of nest material, the others in order of age to the fresh nest. This year's nest completed the width of the porch. Question, will the birds go back to the other end and begin again?

A WHITE SPOTTED BLUEBIRD'S EGG.—On April 27, 1902, a Bluebird's nest was found in an old apple tree containing four greenish-blue eggs and one with white blotches.

Bristol, Pa.

THOS. D. KEIM.

NOTES FROM IOWA: — LECONTE SPARROW (*Ammodramus lecontei*). On the evening of October 20 and the morning of October 25th, I found here near Denmark, Iowa, three individuals of Leconte Sparrow. On the first date mentioned I saw only one. At that time I did not know what the bird was. I was watching the birds in a low brushy hollow beside the road. There were many Juncos, Tree Sparrows and White-throated Sparrows about, but my attention was called to it by its quick excited notes and some of the other birds chasing it about. It was lighter in color than the other sparrows and seemed much smaller. It never flew up high but flitted about among the weeds and grass. It was so restless and active and kept so closely down among the weeds that I could not distinguish its markings with my glasses. The next Saturday morning I went down along the same road with a gun. I found two of the same sparrows and shot one. It was extremely difficult to see them far enough away to get a shot at them. I could walk up to within five or six feet of them and literally kick them out of the weeds but they would dive down into them again within ten feet and run along underneath them. The two were evidently a pair and one was a little more distinctly marked than the other. The strip of weeds beside the road was only five or six feet wide but I passed them several times going that close to them. At no time did they get higher than three feet above the ground. The specimen I shot was too badly torn to keep but I was able to positively identify it.

BEWICK WREN (*Thayomanes bewickii*). I found one in the yard near the edge of town on Sunday October 26th. It was around a large wood pile for some time and I managed to get several good looks at it with my binoculars. The flanks were distinctively rufous or reddish-brown while over the eye was a whitish band. It did not have the excited note most wrens I have seen had, but had only a low chirp which could not be heard far off. It inspected the wood pile all over from end to end and on every side; and if anything it seemed to carry its tail even straighter up over its back than most of the wrens I have noticed. It was too small for a Carolina Wren and having the line over the eye and the reddish flanks so plainly I could call it nothing else than Bewick Wren.

R. L. BAIRD.

CORRESPONDENCE.

The following letter from Mr. Benj. T. Gault, written at Cayenne, French Guiana, shortly after his arrival there, is too full of

interest to remain simply on file. We are promised others as the work progresses.

The journey thus far has been decidedly instructive in many ways. Altogether we were about eighteen days on the boat and just five days out from New York before seeing land of any kind. During these five days we passed but three ships in mid-ocean.

With a monotony, which at such times is in a large measure conducive to drowsiness, it is then that one appreciates the slightest incidents at sea. The sight of a bird, a flying fish, or even a sail, intensifies the interest wonderfully, more especially during a calm sea voyage such as we experienced nearly all the way down. Being the hurricane season we had anticipated some squalls; but barring the chopiness of the ocean for the first day out, and a rather lively sea on after leaving Barbados, our voyage was markedly uneventful. Clear skies above at day, beautiful moonlight nights, and with almost continuous trade-winds prevailing during all the time.

But, in writing of birds, very few were seen after the first day, and even after reaching the islands sea birds appeared to be scarce. Mother Carey's Chickens (*Procellaria pelagica*) made their first appearance when we were passing the Statue of Liberty, two being seen. The next morning they were plentiful about the stern of the ship. The following morning many were also present, but before noon nearly all had disappeared, and we did not again see them after that date. In the outer harbor of New York a number of terns (flock of about 30) and some gulls were seen, but in either case we could not identify them.

On the morning of the 10th of September, the following day after leaving New York, we passed three or four birds resembling Boobies, but their identity was uncertain. However, on the afternoon of the 14th, a Booby (*Sula sula*) came so close alongside our vessel there was no mistaking it. Shortly afterward another appeared; and on the evening of the same day we were greatly amused by the awkward attempts of one to alight on the smoke stack of the steamer. This was about 7:30 o'clock. At one time it became slightly tangled in the rigging.

At a little after high noon (possibly 12:30) of September 11, a rather pathetic incident took place. It was the case of a badly tired out Kingfisher (*Ceryle alcyon*) that made a feeble attempt at making a landing. It tried to gain a footing on the fore part of the vessel, but evidently was frightened away unintentionally by some of the sailors at work on that portion of the ship. At that time we were approximately 200 miles from Cape Hatteras, the nearest point of land, and as the bird flew off to sea in an easterly direction it can easily be conjectured what the final outcome must have been. That same day at 4:30 P. M. we also saw our first Tropic Bird (*Phaethon americanus*). It inspected our ship for a few moments, called once, and passed away to the rearward.

At 8:20 A. M. of the 12th, considerable interest was aroused by the vain attempt of a sparrow-like bird to alight on the forepart of the vessel, and like the Kingfisher, it seemed much exhausted. A few minutes later, another one, possibly of the same species, was frightened from an awning covering the roof of the deck cabin. Both passed out to sea in an easterly direction.

September 13th we recorded another Tropic Bird and between ten and eleven A. M. of the 14th we saw many of them, perhaps 50 in all, the greater number making up a flock of about 40 birds. Since this latter date none have been seen.

In speaking of the Brown Pelican (*Pelecanus fuscus*), we did

not meet with it until dropping anchor in the harbor of St. Croix, our really first stopping place, as we had gone in and out of St. Thomas during the darkness of the night. Here we recorded one whose clumsy fishing tactics furnished us much amusement. St. Croix, perhaps not so pleasing in approach as some of the other islands later visited, was found upon short acquaintance to be of interest. It is interesting to the writer, at least, as offering an approach to a partial introduction to this wonderful tropical world now gradually unfolding itself as each day prolongs our visit to the Guyanas.

Any recognition of the interesting plants, both native and introduced, and met there for the first time, is hardly worth the while, just at this time, considering that much space should be given to rightly do them justice; but one easily marvels at the amount of tree, shrub and herbaceous life, representative of the order Leguminacæ, that is met with at every turn. Then there are the palms in a variety of interesting forms as well as other trees and shrubs remarkable either for their oddity of shape or noteworthy for their beauty of flower or foliage.

In this letter I will not undertake to give much space to the native birds met with up to this writing. I fear it would be unwise as we have only our eyes and glasses to fall back on at present, and to the writer, at least, their proper identification is largely a matter of conjecture.

I think I can safely say, however, that the feature of bird-life in the immediate vicinity and also in the city of Georgetown, British Guiana, where we remained between three and four days, was the abundance of that Tyrant Shrike (*Pitangus sulphuratus*), or Kis-ka-dee, whose "kis; kis; kis-ka-dee" and perhaps more frequently, "kis-ka-dee" can be heard from almost any quarter, and all hours of the day. Here in Cayenne and also in Surinam, it appears to be less plentiful. Indeed, I am not altogether certain of having heard it yet in Cayenne.

At the Botanical Garden of Demerara these birds were particularly numerous, as also were several flycatchers and hummers. From among the beds of the Victoria regia, while there, we had the good fortune of flushing two beautiful specimens of the Jacana (*Jacana spinosa*). A peculiar bird in the garden, too, was the Ani (*Crotophaga ani*) also a species of grackle (possibly *Quiscalus lugubris*) of which several were seen. The former kept close to some gardeners who were mowing the lawn; crowding up at times so closely as to almost come in contact with their scythes, presumably in quest of grubs of some kind. A large oriole also attracted our attention in the garden and in addition to the foregoing, several herons and one large hawk were recorded.

Another familiar bird common to the three leading cities of the Guianas is (*Troglodytes furvus*) which in song and general makeup greatly resembles our common House Wren at home.

In Cayenne the Carrion Crow (*Catharistes atrata*) is an exceedingly abundant bird, unsuspicious as the domestic fowl and thoroughly at home everywhere. Numbers of them roost in the tall royal palms (a beautiful grove of them by the way, and one of the attractions of the city) across the street from our hotel. In the harbor during the early morning hours gulls and terns are common about the pounds or traps of the fishermen. A nesting resort of the latter must be in this vicinity as we have seen quantities of what were taken to be eggs of the Royal Tern (*Sterna maxima*) on sale in the public market place, as are also various species of wild birds such as the Toucan and Parrot,

the Scarlet Ibis (*Guara rubra*) in a variety of interesting plumages, the Greater and Lesser Yellowlegs (*Totanus melanoleucus* and *flavipes*), Least (*Tringa minutilla*) and Semi-palmated (*Ereunetes pusillus*) Sandpipers, etc. Of sea birds, while at Demerara, we recorded the Black Skimmer (*Rynchops niger*), two being seen at the time of our visit to the sea wall.

But this list might be appended to considerably by the addition of other species, but of which the identification is in some instances doubtful. The islands (Leeward Island), too, offered several varieties not recorded by us thus far from the mainland.

In closing, however, I must not neglect to mention the occurrence of the little Yellow Warbler (*Dendroica aestiva*) first noticed by us as tolerably common on the island of Dominica. Equally at home among the tropical trees, as in our own willow thickets at home, its familiar song and apparent abundance made for us a real pleasure while visiting that lovely island. Later, if time may permit, it is my intention to send you some additional notes from a wilder field, perhaps from the yet unexplored, or at least less frequented parts, of this and the adjoining colony of Dutch Guiana, alike interesting to the gold seekers and naturalists.

Yours truly,

Cayenne, F. G., 3rd October, 1902.

BENJ. T. GAULT.

PUBLICATIONS RECEIVED.

THE AUDUBON CALENDAR FOR 1903. Published under the auspices of the Massachusetts Audubon Society. By Taber-Prank Art Company, Springfield, Mass. Copyright, 1901, by Mrs. J. W. Elliot, Boston, Mass.

The plan of this beautiful calendar is well conceived and carried out with unusual good taste. Each of the six 12 x 10 inch sheets is printed in pale yellow with narrow white margins, containing two months of date, and some bird in natural colors with appropriate environment, to fill up the page. The arrangement of the sheets differ according to the demand of the colored figure. Thus, the Baltimore Oriole for May and June occupies the upper part of the page with the months arranged below. The selection of birds is logical and happy. Thus the Snowflake represents January and February, the Fox Sparrow March and April, the Baltimore Oriole May and June, Wood Thrush July and August, Meadowlark September and October, and the Red Crossbill November and December. The reverse side of each sheet contains matter descriptive of each of the birds figured, taken from H. D. Minot's "The Land-Birds and Game-Birds of New England" second edition, edited by William Brewster. This calendar will make a contribution to the beauty and brightness of any room or office.

L. J.

SOME NEW SOUTH AMERICAN BIRDS by Harry C. Oberholser, Assistant Ornithologist, Department of Agriculture. From the Proceedings of U. S. National Museum, Vol. XXV., pages 59-68, No. 1276.

During the course of various recent systematic researches in the bird collection of the United States National Museum, the following South American species and subspecies, apparently new, were incidentally brought to light. Five families are here represented. Under the Formicariidae one new species is described. The Furnariidae has added to it one species and one subspecies. Tyrannidae are increased by one genus, four species

and subspecies. Icteridae have added to them two subspecies. The Troglodytidae have no additions, but a species already described is more accurately defined, and the several species are rearranged and their distribution outlined. L. J.

REPORT OF THE MASSACHUSETTS AUDUBON SOCIETY, for the Protection of Birds, 234 Berkeley Street, Boston, Mass.

This active society for the protection of birds numbers 5362 members, only 1076 of whom are under sixteen years of age. From this it will be clear that the people of Massachusetts are in earnest about the protection of their native birds. Their activity is well evidenced by the annual expenditures, which run all the way from \$1,225.00 to \$1,952.00. From this report we discover no evidence that the movement is in any way an hysterical one, but rather a sober effort to accomplish a much needed reform in the popular attitude toward the birds. We are also pleased to note that in the United States outside of Massachusetts there are twenty-seven state societies endeavoring to do the same work. While the nature of our scientific work with the birds debarrs us from taking the ironclad Audubon pledge, we can nevertheless heartily endorse the object of the Audubon organization. L. J.

NORTH AMERICAN FAUNA, No. 22, By Edward A. Preble, Assistant Biologist, U. S. Department of Agriculture. October 31, 1902.

Among the contents of this number we find an annotated list of the birds of the Hudson Bay region. The whole number is devoted to an account of an expedition fitted out for a biological exploration of this region by the Biological Survey, in 1900. The birds listed number 260 species and subspecies, representing all that is known for the region to the close of the expedition. This indicates the richness of the region and the possibilities open to one who might spend several years on the ground. Lists of the Mammals and Batrachians are also given. L. J.

LIST OF BIRDS COLLECTED BY WILLIAM T. FOSTER IN PARAGUAY. By Harry C. Oberholser. From the Proceedings of the U. S. National Museum, Vol. XXV, pages 127-147, No. 1281.

This collection, though small, is of more than usual interest. It consists of 78 specimens, representing 65 species and subspecies, several of which appear to be heretofore unrecorded from Paraguay. The descriptions of four species and three subspecies are here given. The annotations are almost wholly descriptive of the birds. L. J.

BIRDS COLLECTED BY DR. W. L. ABBOTT AND MR. C. R. KLOSS IN THE ANDAMAN AND NICOBAR ISLANDS. By Charles W. Richmond, Assistant Curator, Division of Birds. From the Proceeding of the United States National Museum, Vol. XXV., pages 287-314, No. 1288.

Amateur Sportsman, The, Vol. XXVII, No. 1.

American Ornithology, Vol. II., Nos. 10, 11.

Bird-Lore, Vol. IV., No. 5. 6.

Bulletin 60, Penn. State Agricultural Experiment Station.

Condor, The, Vol. IV., Nos. 5, 6.

Game Laws for 1902. U. S. Department of Agriculture.

Journal of Applied Microscopy, Vol. V., No. 10, 11.

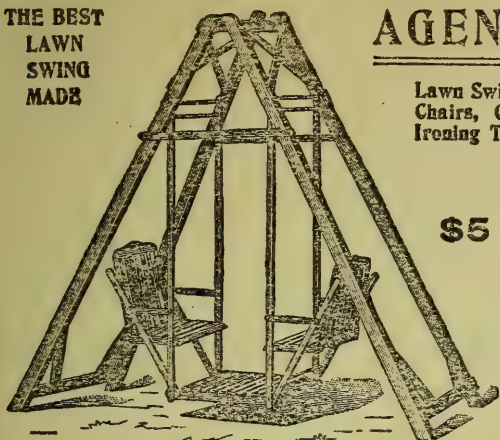
Journal of the Maine Ornithological Society, Vol. IV., No. 4.

Maine Sportsman, Vol. IX., Nos. 109, 110, 111.

Plant World, The, Vol. V., Nos. 6, 7.

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